Archaeology – the science of the spade?

Modern archaeology is more than just excavating! Archaeologists also employ various methods that allow them to examine the ground without actually opening it up.

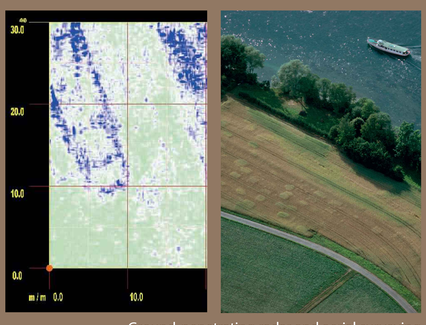
All the information that is available about the archaeology of Canton Thurgau is collected and stored in the archive of the Department of Archaeology. The records form the basis upon which sites of interest can be located. They help to save time when it comes to organising excavations before construction gets underway.

After thorough preparation, woods and meadows are searched as comprehensively as possible. Any objects such as ramparts, ditches or burial mounds are recorded, described and, where possible, dated.

If conditions allow, aerial imaging and geomagnetic surveys can help to identify and locate unusual landforms or structures hidden below ground. In many cases it is not even necessary to excavate – after all, the ground is still the most cost-effective archive. Future methods will probably allow us to gain even more insight on the archaeology in the area. Until then, the finds and features in the ground will continue to lie dormant in an “archaeotope”.

Land survey

Fieldwalking



Ground-penetrating radar and aerial surveying

Underwater survey

Watching brief

Study of historical sources

In recent decades, archaeologists have become increasingly interested in the lakes. Wave action, lakeshore reinforcements, dredging and the construction of harbour facilities can threaten the remains of prehistoric lakeside villages or even shipwrecks. In order to locate this evidence on the lakebed, divers' surveys as well as cutting-edge technology such as satellite sonar or borings are being used. Today we increasingly try to protect the remains under water by using protective coverings to preserve them for future generations.

Construction pits give us an insight into the ground. In many cases, we expect archaeological features to come to light and thus carry out a watching brief. We also often receive information about chance discoveries from interested private parties or from building contractors themselves.

Historical sources such as charters, reports, images, legal undertakings, property descriptions etc. also provide important information. Old maps, for instance, show objects that have long since disappeared, including castle complexes, chapels, deserted villages and farmsteads or abandoned roads.

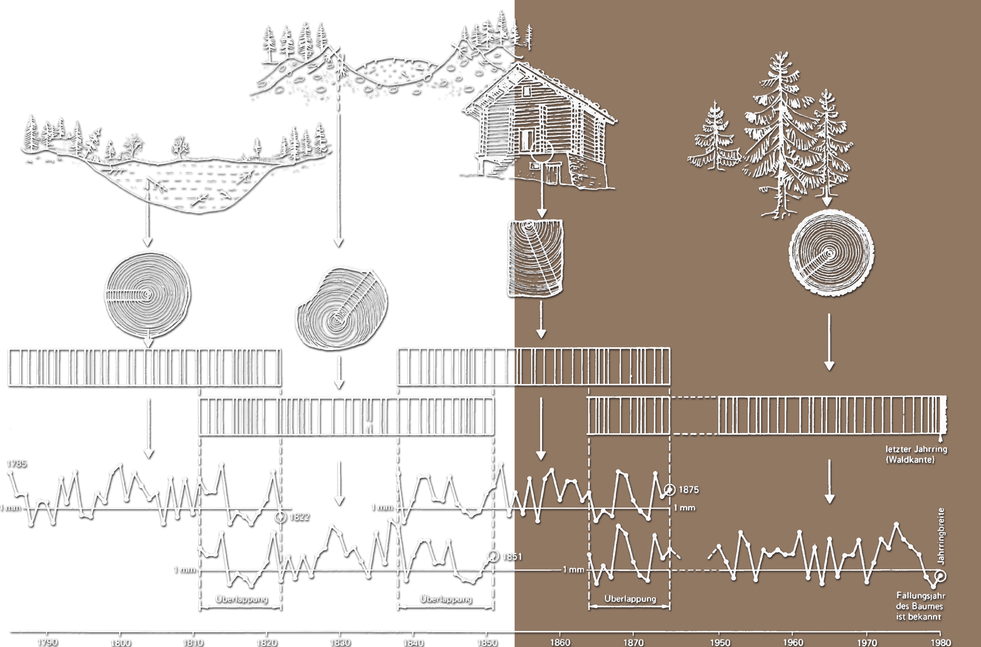
Trees are like nature's calendars

Dendrochronology is based on the fact that trees add a growth ring every year; wider rings in years with a good climate and narrower ones in years where the climate is not particularly favourable. Because all trees react fairly similarly to climatic factors, the trees from the same period and region exhibit the same tree-ring sequence. The pattern of narrower and wider tree rings can be recorded in the form of a curve. If the characteristic tree-ring sequences overlap, we can build a calendar curve that reaches back into the distant past. If we find an ancient piece of wood on an excavation, a dendrochronologist will measure the tree rings and compare them with the established calendar curve. This allows us to date wood that has been lying in the ground for millennia to the exact year!

Nothing is holier, nothing is more exemplary than a beautiful, strong tree. When a tree is cut down and reveals its naked death-wound to the sun, one can read its whole history in the luminous, inscribed disk of its trunk: in the rings of its years, its scars, all the struggle, all the suffering, all the sickness, all the happiness and prosperity stand truly written, the narrow years and the luxurious years, the attacks withstood, the storms endured

Hermann Hesse

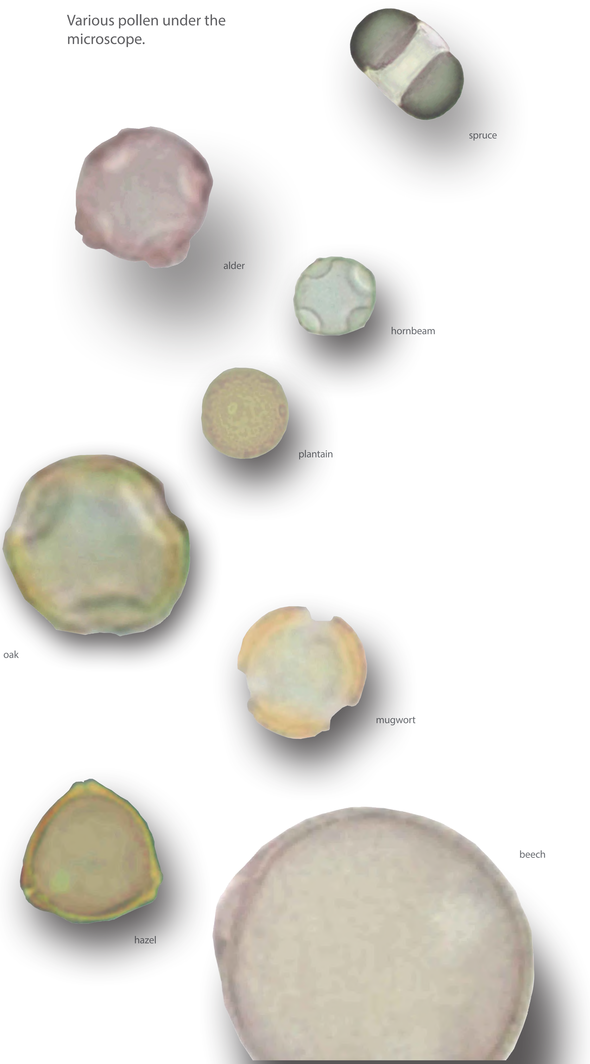
Cross-section of the Roman figure from Eschenz. Thanks to this X-ray image, archaeologists were able to date the wooden figure.



The archive in the bog

Our cultural landscape today is the result of millennia-old changes to the vegetation due to the climate on one hand and human impact on the other. The reconstruction of the history of vegetation is based first and foremost on bogs and lakes; thanks to their layered structure they essentially act as archives. Under anaerobic conditions (without air), not only are the microscopic grains of pollen preserved but also a huge variety of seeds, fruits, leaves, wood and charcoal splinters. By identifying these remains, we can reconstruct the natural and cultural landscapes of the past. The radiocarbon dating method allows us to put the changes in the vegetation into chronological order.

Various pollen under the microscope.



For example: The Seebach Valley

9500 BC: At the end of the last Ice Age the landscape was characterised by pine woods with the occasional birch tree. On average, temperatures were at least 2–3°C lower than today. Because soil formation had only begun, the undergrowth was mainly made up of relatively undemanding plants such as grasses and mugwort. Around 10,000 BC, the Laacher See Volcano in the Eiffel region of Germany erupted; the ash from this eruption reached as far as Canton Thurgau.

7000 BC: Compared to today, the climate was more humid and average temperatures were around 1–2°C higher. Lake levels receded, the shores fell dry and began to silt up. Thick layers of peat formed. The surrounding areas were covered in dense forests with a high percentage of lime trees, scattered with 12 m tall hazel trees, elms and oaks. Mesolithic hunter-gatherer groups roamed the woods

3700 BC: In the Neolithic period, oak forests scattered with fir trees, spruce and beech characterised the landscape. Crops were cultivated in small fields that had been cleared by fire. Wheat pollen attests to the immediate proximity of the fields. Ribwort and bracken point to animal husbandry, though large-scale meadowland had not yet been established. In the winter months, the domestic animals had to be fed dried leaves. This practice had a big impact, particularly on the lime and elm tree stocks.

Around 800 BC: Beech and fir forests predominated during the Late Bronze Age and hornbeam began to appear. Acorns were regularly gathered, to be used either as fodder for the animals (for fattening pigs) or as emergency supplies for the people. The human impact was now becoming visible in the lakes. Nutrient-loving species such as water lilies and algae began to appear. The shorelines were covered in dense alder groves.

Post-Iron Age tundra

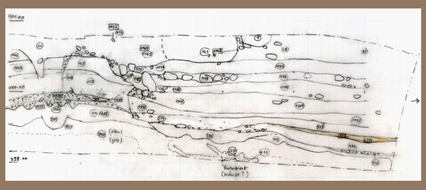
The Seebach Valley today

Layers of soil – chapters of history

Archaeological and geological layers can be read like history books. They give us information about the chronological sequence and the conditions in which the layers were originally deposited. They are the archaeologists' archives. Layer by layer they progress deeper into the past. To ensure that a section or profile can still be studied and analysed after the excavation, it is important to carefully record it on site by photographing, drawing and describing the sequence of layers in as much detail as possible. Sediment samples are often taken from individual layers, which can later be examined with regard to their grain sizes and chemical compositions.

Drawing of the sequence of layers found during the excavation at Tasgetium (Unter-Eschenz) in 2005

The drawing of this section is shown in mirror image next to it.



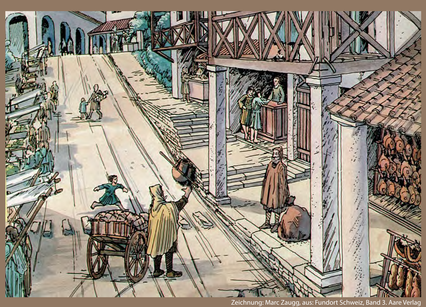
The Roman road at *Tasgetium*

Excavations carried out at Eschenz in 2006 brought to light this section of a Roman main road with a covered walkway (portico) next to it. The soft, damp ground was reinforced with a wooden grating and then covered with a bed of gravel. This first phase was dendrochronologically dated to the second decade AD. Later, it was repeatedly covered over with levelled layers of gravel. Various levels of the road still exhibited traces of wheel ruts. (One such section is on display on the 2nd floor.) A ditch filled with rubble helped drain the road. Medieval burials from the graveyard of St Vitus' Church were dug into the topmost layer of the road. They are visible due to their darker colouring. After the excavation was completed, the section of the road was stabilised with synthetic resin and then recovered in strips and preserved

The wooden grating beneath the Roman road consisted mainly of oak timbers. It was laid in the second decade AD.

In situ detail of the road section.

Reconstruction drawing of a Roman village road with covered walkways (*porticos*).



Zeichnung: Marc Zaugg, aus: Fundort Schweiz, Band 3, Aare Verlag