

Project 2009

Alemannic Settlement “Schuttereger” (4th century): Mapping using geoelectrical survey and surface find collection

(Eckstein, Arnas, Beck, Moll)

Brief history of the area around Kehl (Ortenau)

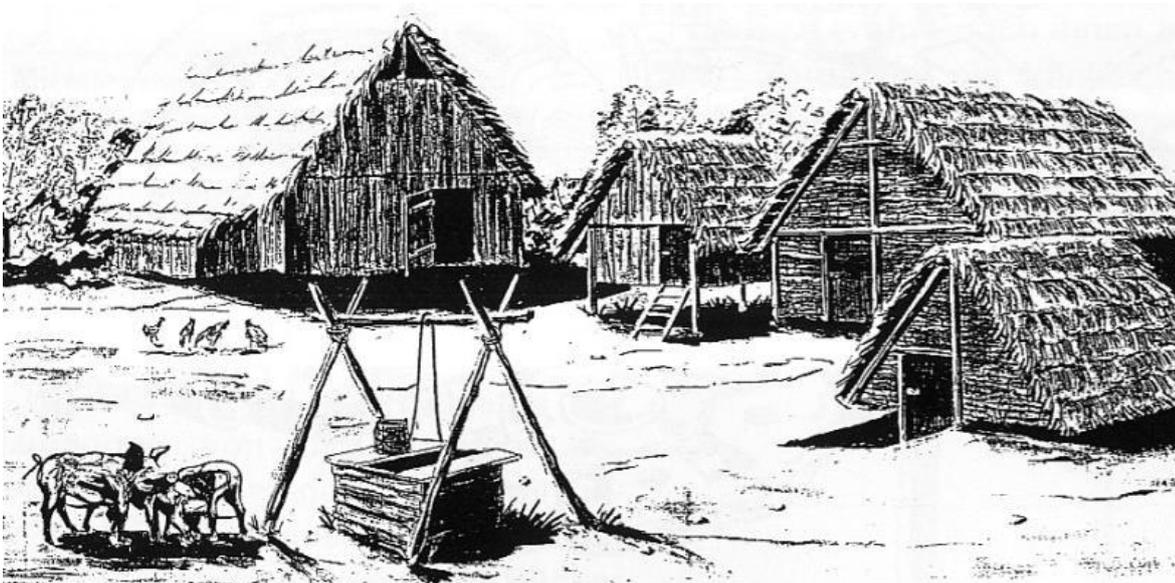
After the **Battle of the Teutoburg Forest (9 AD)**, Rome initially withdrew from the territory east of the Rhine and secured the **frontier along the river**. Only around the **middle of the 1st century AD** did **Roman expansion across the Rhine** begin again.

The area of present-day **Ortenau** then became part of the **Roman province of Upper Germania** and was developed through a network of **roads, forts, and rural estates (*villae rusticae*)**. The region experienced about **two peaceful centuries of Roman administration and agriculture**.

In the **3rd century**, however, **Germanic groups**, especially the **Alemanni**, pushed into the region. With the **fall of the Upper Germanic–Raetian Limes around 260 AD**, Roman rule east of the Rhine came to an end. Many **Roman settlements were abandoned or destroyed**.

By the **4th century**, the **Alemanni** had **permanently settled in the Ortenau**. Their settlements consisted of **small, loosely arranged farmsteads** built of **timber and clay**. The area remained a **frontier zone between Romans and Alemanni** until it was **conquered by the Franks in the 5th century**. Under **Frankish rule**, **Christianization** began and the **transition to the Early Middle Ages** took place.

Alemannic Building Style



<https://www.boeingen.de/gemeinde/unser-boeingen/geschichte-leitbildentwicklung/ortschronik>

Alemannic settlements consisted of **small, loosely arranged groups of farmsteads with timber-and-clay houses**, often built as sunken-floor huts (*Grubenhäuser*) with a rectangular ground plan of about **4 × 6 meters**. The **floor was slightly sunken**, and there was usually a **hearth in the center** of the building. The **walls were made of wattle and daub**, and the **roofs were thatched with straw or reeds**.

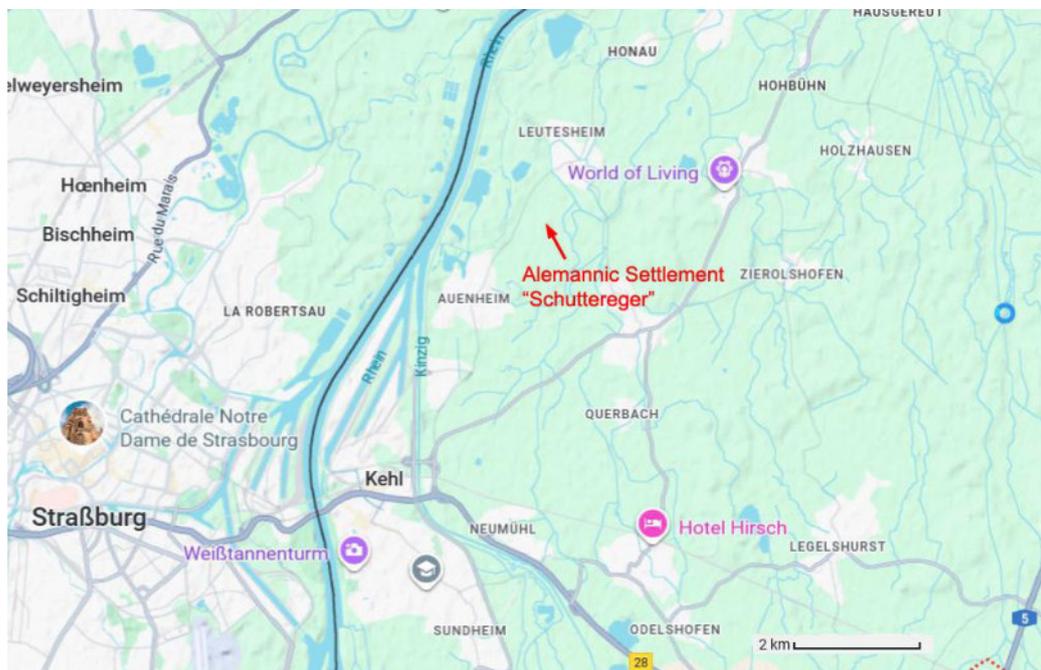
The settlements were **open in layout**, generally **sometimes enclosed by palisades or ditches**, but **lay freely in the landscape**, often near watercourses or fertile soils.

Settlement Schuttereger

Approximately 6 kilometers northeast of the Einstein-Gymnasium in Kehl lies the Alemannic settlement "Schuttereger" dating from the 4th century AD.

Nothing of the settlement is visible on the surface today.

The site was **discovered around 2008 by Walter Straub** from Auenheim, who began a meticulous search for surface finds. During his investigations, **he found numerous pottery shards and several coins** (see below).



Walter Straub (discoverer), Johanna Epstein (EG Geosciences), field assistant (name unknown)

Goelectrical Mapping

The settlement had **not yet been investigated in 2009**. Therefore, the **geoscience team of the Einstein-Gymnasium** was commissioned to carry out a goelectrical survey on the site, with the goal of **determining the layout of the settlement**.

The method chosen was **Induced Polarization (IP)**, which is particularly suitable for detecting remnants or transformation products of organic material from the former timber constructions, as these are expected to show **higher chargeability**. The survey field was measured on a 10 × 10 meter grid with a spatial resolution of 1 meter. Data acquisition was performed using a **self-built apparatus**, applying the **four-electrode method** by inserting the probes directly into the ground.



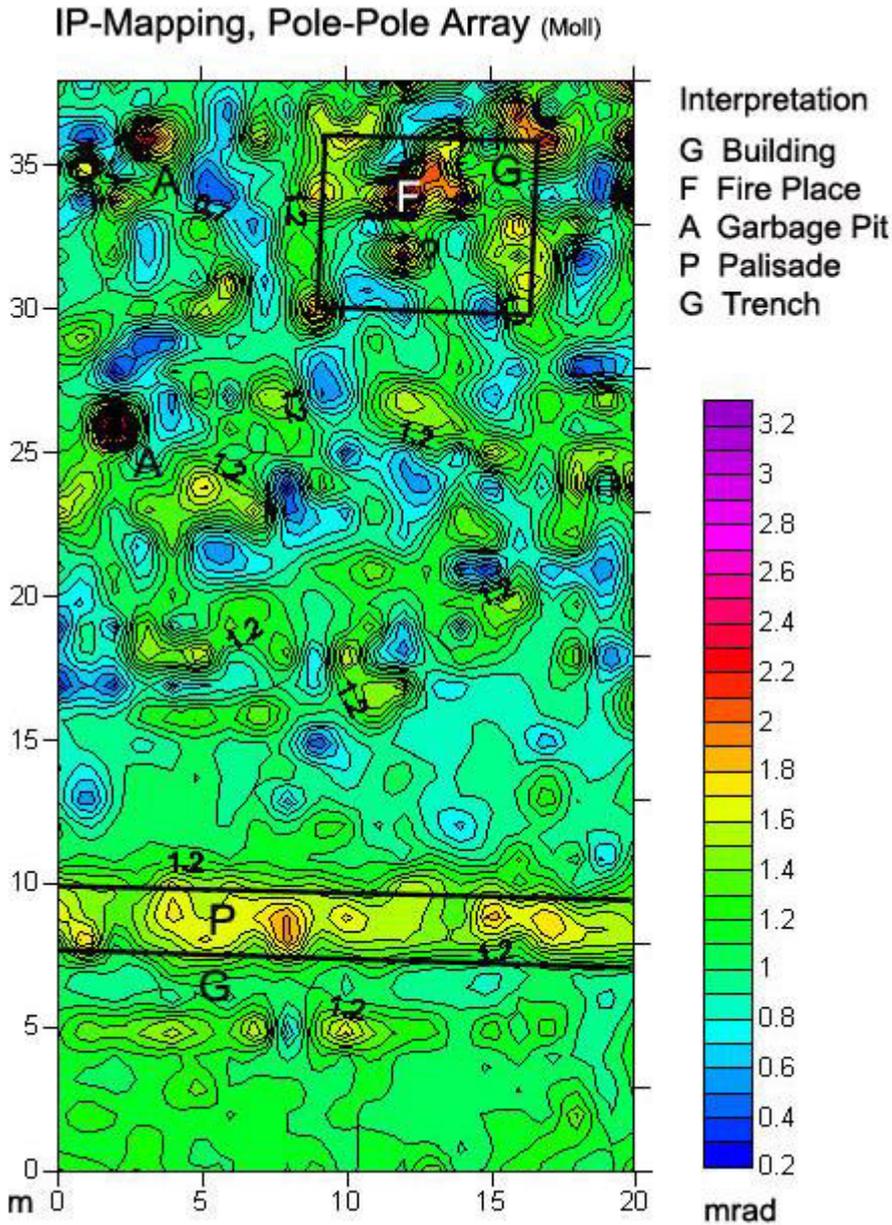
Goelectrical data acquisition (IP): Stefan, Alper, Jonathan



Goelectrical measuring device: "4-Point Light" by Lippmann (on loan).

IP-Map

Organic remains of wooden structures appear in the IP profile as zones of **higher chargeability**, since they leave behind areas of increased ion activity and less conductive interfaces in the soil. In this way, ancient settlement structures can potentially be identified indirectly.



Traces of the settlement layout could only be **detected in a rudimentary form** (see mapping).

Explanation: Due to decades of maize cultivation, the field has been ploughed repeatedly to depths of up to 70 cm, which has largely destroyed the historical structures.

Our measurement results show only a small section where faint traces of former ground structures can still be cautiously interpreted.

Surface Find Collection

During the geophysical fieldwork, our team repeatedly found **Alemannic pottery fragments** on the surface. The **ploughing of the field** over the years had brought these **artefacts to light**. The students of the Geosciences project group (AG) contributed their finds to the current **collection of the Kehl Local History Museum**, thereby enriching its archaeological exhibits.



Alemannic pottery shards (4th century), typically hand-shaped and unglazed (Moll)



Alemannic pottery shards, oxidizing firing (high air supply):

During firing, oxygen reacts with the iron compounds in the clay, forming iron(III) oxide (Fe_2O_3), which gives the pottery its red to reddish-beige coloration (Moll)



Alemannic pottery shards, reducing firing (low air supply, heavy smoke): A lack of oxygen converts iron(III) oxide into iron(II) oxide (FeO), resulting in gray to anthracite-colored pottery fragments. (Moll)



Alemannic pottery shards: mixed firing (Moll)



(Moll)

Upper Row

Left: Small, clear glass fragment with rim – presumably the **rim of a drinking vessel or beaker** from **late Roman production**.

Center: Two **light green, iridescent glass fragments** – typical **window glass or vessel fragments** of **Roman origin**; the **green coloration** results from **iron oxide** in the glass.

Right: **Multicolored glass bead (blue-black with red and white wavy lines)** – a piece of **jewelry**, often found in **Alemannic female graves**, originally of **Roman-provincial or Mediterranean production**. Evidence of active trade between the “Schuttereger” Alemanni and the Romans!

Lower Row

Left: Large, greenish glass piece with perforation – probably a **large glass bead** or a **vessel base fragment** with convex bottom, possibly **recycled glass**.

Center: Small, round clay piece with hole – presumably a **spindle whorl**, i.e. a **weight for hand spindles** used in **textile processing**.

Right: Triangular fragment with **blue glass inlay** – possibly a **broken piece of another glass bead** or **mosaic element**.

Evidence of active trade between the “Schuttereger” Alemanni and the Romans!



(Moll)

Iron Slag – evidence of Alemannic iron processing (4th century AD)

Finds of **porous, black-gray slag fragments** from the settlement;

Residues from **iron smelting or blacksmithing activities**;

Formed in **bloomery furnaces** during the processing of **bog iron ore** using **charcoal**;

Typical features: **porous structure, glassy surface, partly magnetic**;

Evidence of **local metalworking** and **technical knowledge** of the Alemanni;

Demonstrates **self-sufficiency** and **craft specialization** within the settlement.



(Moll)

Light beige, finely tempered pottery, smoothly polished;
Rim fragment, presumably from a beaker, bowl, or jug;
Wheel-thrown, clearly recognizable by the uniform wall thickness and turning marks;
Evidence of trade between the "Schuttereger" Alemanni and the Romans!
Oxidizing firing → light, beige color.



(Moll)

Material: fine- to medium-grained fired clay; brown, evenly colored;
Clearly pronounced notch or indentation on one side;
Possibly part of a spindle whorl, loom weight, or tool fragment made of clay.



(Moll)

Flint flakes

Material: reddish-yellow banded **jasper or chalcedony**, very hard and splitting with sharp edges

Typical features:

Distinct **striking platforms** and **bulbs of percussion** → **controlled flake removal**;
Sharp, concave fracture edges – typical of **stone tool production**

Interpretation:

Fragments of **flakes or tools** (e.g., scrapers, knives, graters)
Could be **secondary finds** in the Alemannic soil – **older than the settlement itself**,
possibly **Neolithic (Stone Age)**

Indications of an earlier prehistoric use of the site prior to the Alemannic settlement!

Scientific Continuation

One year after the work by **EG Geosciences**, the settlement **“Schuttereger”** was mentioned for the first time in a **scientific publication**.

Dr. Andreas Haasis-Berner (historian and archaeologist) writes:

“The most important site for this period [4th century AD] in northern Ortenau is currently Kehl-Auenheim ‘Schuttereger’.

Here, **35 coins dating from 330–355 AD** were found. In the 4th century, there were repeated **conflicts between the Roman Empire and the Germanic tribes**, also affecting the region of Alsace and the right bank of the Rhine, e.g. the **Battle of Strasbourg in 357**.

The numerous coins from the **Ortenau region** also point to a **connection between the Germanic tribes living east of the Rhine and the Roman Empire**, although after about 400 AD, such finds are **no longer represented** in Ortenau.

After that, up to the 6th/7th century, no further finds are known.

This means that for about **200 to 300 years, northern Ortenau seems to have been uninhabited**.

In contrast, in **southern Ortenau**, the **cemetery of Ichenheim** and an **individual grave near Lahr** already represent finds from the **5th century AD**, along with a **grave dated to around 500 AD at Mahlberg**.

Source: “Archaeological Research in Northern Ortenau,” published in *Die Ortenau*, Vol. 90 (2010), pp. 23–44.

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