4th international congress on ancient thermalism

PRE-PROCEEDINGS

THE PRESENT AND FUTURE OF ROMAN HEALING SPAS

INVESTIGATION, PROMOTION AND PROTECTION OF THERMAL HERITAGE

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ARCHE'EAU
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Session 1. Studying ancient healing spas: a new look at old data and interpretations in the light of recent research

Veni Bibi Vichy. Current state of archaeological knowledge on ancient thermal spas in Vichy (France): thermal baths that do not always reveal their source

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The aim of this collective paper is to present the current state of knowledge on ancient thermalism in Vichy.

In the 19th and 20th centuries, the town of Vichy (Allier, Auvergne-Rhône-Alpes, France) experienced a boom linked to its spa industry, basing its reputation on the curative virtues of its hot waters, recognised since antiquity. Local scholars, usually doctors, took an interest in the archaeology, and uncovered the town's ancient past. Through references to exceptional remains, they built up an image of an idealised spa town, identified as *Aquis Calidis* on the Peutinger Table, and furnished with monumental thermal baths.

Research carried out since the mid-19th century on the thermal aspect of the city has produced a wealth of documentation which is often redundant and imprecise. In addition, construction work on top of the modern baths has largely altered the previous layout around the springs, restricting access to potential remains and making it difficult to carry out an archaeological study of these areas. However, it is still possible to take

a fresh look at the issue: what remains and artefacts have been found? How can they be interpreted? Which uses were they destined for in association with the waters?

A recent study of this archaeological data as part of university research and preventive archaeology operations has enabled us to reconsider the image of the ancient town, to clarify its topography and to gain a better understanding of how the springs were used in Roman times. A bibliography review, a study of the water catchments, the reinterpretation of artefacts (votive offerings, beakers, etc.) and new field data confirm that two hot mineral springs were tapped during antiquity (Chomel, Hôpital), and a third is thought to have been used (Lucas). They also reveal the existence of specific ancient installations in the vicinity of these springs (pools, galleries, pipes, etc.) and offer a glimpse into the curative purposes of the thermal waters.

Furthermore, the recent discovery of monumental non-curative thermal baths in Cusset, less than 5km from Vichy, raises many questions about the relationship between these two places. Vichy town council, keen to highlight the ancient past of this 'Queen of the spa towns', wants to promote the town's spa heritage.

Keywords: Vichy, historiography, thermal waters, hydraulic facilities, curative purposes

Ancient thermalism in Vichy (France): the excavations around the Hospital Spring

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In 2023, the archaeological excavations carried out in Vichy by the National Institute for Preventive Archaeological Studies (Inrap) led to the discovery of ancient remains in close proximity to the Hospital spring.

Immediately to the east of the spring, and at a depth of 3m, an open-air water gutter was revealed, carved out of large, cut limestone blocks laid in a row and bound by a lime mortar. To the east it bordered a portico or stairs and to the west a level esplanade running towards the Roman spring. The carbonate concretions clogging up the gutter indicate that the latter was used for both rainwater and thermal water drainage, while the ceramic finds in its foundations reveal that it was built in the 1st century CE.

To the south of the spring the remains of a pool were discovered, of the same age as the gutter, which initially extended for the most part beneath the modern rotunda of the Hospital spring. Its southern edge, partly preserved, is made of a thick formwork of tile fragments bound with a crushed ceramic mortar, and its bottom is formed either of a bed of crushed ceramic mortar laid on the levelled bedrock or of large roof tiles (tegulae) laid on a bed of Roman concrete.

A masonry gallery was found beneath the pool, which originally ran from the Roman spring under the modern rotunda to the Allier river 300 metres away. Partly filled with carbonate concretions, the gallery was a sewer used both to evacuate the spring overflow and to drain the pool that overlies it.

These architectural remains point to the existence of Gallo-Roman thermal facilities around the Hospital spring in Vichy, built in the Early Empire period and abandoned in the 4th century CE.

Keywords: Vichy, Gallo-Roman, pool, gutter, drain

Should Vichy (France) be considered as the Aquis Calidis mentioned and depicted on the Peutinger Table?

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The Peutinger Table is a major cartographic document, a medieval copy of an ancient original drawn up in the 3rd and 4th centuries. It is often used by researchers working on routes and the road stations or towns along them. Segment 2 documents the Gallic provinces and provides a schematic view of the main road network, with distances between towns expressed in leagues. Researchers in the 19th century commented extensively on this document and tried to make archaeological discoveries coincide with references in the Table in order to determine the ancient names of sites or to legitimise the Roman past of contemporary towns. They did not hesitate to use copyist's errors or selective toponymic data to support and validate their proposals. This is how *Aquis Calidis*, located west of *Aūg. Nemeto* and bearing a symbol characteristic of thermal establishments, was identified in Vichy, in what is now the department of Allier, but also in Saint-Maurice (site of Sainte-Marguerite) and Mont-Dore, located in the Puy-de-Dôme, and even in Chaudes-Aigues in the Cantal. The abundance of 19th-century literature on the subject gradually dried up in the 20th and 21st centuries, leading to a fairly consensual identification of *Aquis Calidis* with the site of Vichy. The latter has both hot thermal waters and a proven ancient past. By once again taking stock of the ancient data and in the light of the discoveries made over the last few decades, both in the context of programmed archaeology and preventive archaeology (for road, resort and town construction), we propose a new, objective reading of the subject.

Keywords: Peutinger Table, Aquis Calidis, roads

The ancient thermal baths of Évaux-les-Bains (France): new releases from the northern part and new data

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The ancient thermal baths of Évaux-les-Bains are located at the northern end of the vicus *Evaunensis*, an ancient secondary agglomeration that is still largely unknown. The thermal site has been the subject of numerous interventions since the first clearings undertaken during the second quarter of the 19th century and the conservation of the ancient remains is largely dependent on these first works as well as all the redevelopments undertaken since and linked to thermalism, still active on this site. The hydrothermal artefacts from the ancient period infer a medical, curative and therapeutic vocation for the thermal baths of Évaux-les-Bains, continued to the present day in the form of hydrotherapy. However, the interpretation of the remains made during the discoveries of 1833 to 1852, taken up by Dr Janicaud, could suggest thermal baths for pleasure, hygiene, sport or relaxation, inherited from the Greek world. It is possible that the two functions coexisted in the same building with a mixed therapeutic and hygienic vocation. However, this new work on the northern part of the ancient Evahonian building only concerns the curative and therapeutic installations of the Gallo-Roman developments. The reinterpretation of old data, coupled with the stratigraphic study of the excavated remains, provides a new perspective on the ancient thermal site of Évaux-les-Bains and the use of the preserved spaces. This new work also raises the question of the conservation of these remains, classified as Historic Monuments, and their integration, or even their reuse in modern developments, necessary for the continuity and renewal of hydrotherapy at the start of the 21st century.

Keywords: Évaux-les-Bains, rereading of old data, recent excavation

The “thermes sud” of Néris-les-Bains (France) in the light of 19th century excavations and the more recent studies

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Interest in the antiquities of Néris-les-Bains has always been linked to its status as a spa town. We know that in Roman times at least two thermal baths were located at the bottom of the ”thermal valley”. At the beginning of the 19th century, construction work on the modern thermal baths, near the hot spring, led to the discovery of what is supposed to be the main establishment dating back to Roman times, today known as the “thermes sud”.

The results of these excavations are known thanks to the descriptions of Pierre Boirot-Desserviers, Louis Forichon and Louis Esmonnot. They all describe a building of considerable dimensions, characterised by the presence of porticoes and the use of marbles. It was precisely because of their monumental aspect that Boirot-Desserviers proposed to preserve these ancient remains within the modern spas, but his project was rejected by the authorities of the time.

More recently, new excavations carried out in the 1990s by Sophie Liégard and Alain Fourvel have made it possible to date these structures to the 2nd century CE. However, the presence of an earlier spa on this site cannot be excluded, as some clues seem to suggest.

The aim of this paper is to take stock of these discoveries and the information they provide on the “thermes sud”, particularly regarding their plan and structures, as well as their water supply and their place in the urban topography.

The question of the use of the thermal spring in the period between the abandonment of the “thermes sud” and the construction of the modern spas will also be explored.

Keywords: Néris-les-Bains, spa town, thermal baths

[Poster] The northern Roman baths of Néris-les-Bains (France)

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Preventive excavations carried out by Inrap at the end of 2022, prior to the renovation of the municipal swimming pool, led to the rediscovery of the remains of the northern baths of the Roman *Aquae Nerii* settlement. This monumental building was discovered in 1840, and excavations in 1847 revealed three pools. In 1951, a large part of the original building was destroyed during the construction of the current swimming pool, with no archaeological supervision. The building to the north of the site was not preserved. The question of the extent and timing of their restoration has long been debated.

The recent archaeological excavations of the three Roman pools revealed preserved Roman remains: the 20th-century restoration work carried out there consisted of raising the edges and creating a replica of the basins above the ancient remains to ensure the protection of the latter. The ancient tile mortar floor was uncovered, along with a metre-thick foundation slab, evidence of the impressive masonry work carried out in Roman times.

The recent excavations carried out in the equipment room revealed the foundations of a 1.50 m-wide Roman wall. Oriented north-south, with a height of 1.25 m, it could be followed over a length of almost 10 m. The masonry of the wall is generally composed of small blocks, bound with lime mortar, but also includes large blocks on the south side and reused *bipedal* bricks (larger blocks from the heating systems). The cement repointing on the small blocks indicates that it had already been uncovered during the initial excavations. The level of Roman-age fill beneath the current swimming pool has yielded two Corinthian capitals and almost a hundred fragments of marble veneer, providing us with an idea of the original decor of the thermal baths.

Keywords: spa, wall, pools, marble, capitals

[Poster] Bourbon-l'Archambault (France): from ancient thermal baths to today's spa area

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Mme de Sévigné, Boileau and Mme de Montespan stayed in the illustrious resort of Bourbon-l'Archambault (Allier, Auvergne-Rhône-Alpes, France) to enjoy the benefits of its thermal waters, which gush out at a temperature of 55°C. These thermal baths became very famous in the 17th-18th centuries, and their ancient origins soon became the subject of investigation by local and visiting scholars. Indeed, as early as 1569, Nicolas de Nicolay described a basin equipped with three wells and made a drawing of it.

It was not until the 19th century that another ancient pool was discovered, preserved in the cellar of what is now the Hôtel Montespan-Taleyrand.

This poster presents the meagre knowledge we have of these ancient thermal baths, based solely on discoveries from the past. It also looks at how the spa building was transformed, firstly in medieval times (into a royal dwelling), then again in the 19th century, when a new building, which is still in use today, was constructed.

Keywords: Bourbon-l'Archambault, historiography, pool, basin, wells

The thermal baths of Royat/Chamalières (France), data review

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Augustonemetum, capital of the city of the Arverni (or "sanctuary of Augustus") was created at the beginning of our era on the Via Agrippa, the major axis linking Lyon, the capital of the Gauls, to Saintes, capital of Aquitaine.

The thermal baths of Royat/Chamalières are located on the pilgrimage route leading to the exceptional temple of Mercury at the top of the puy de Dôme, which is one of the largest mountain sanctuaries in the Roman West. The excavations from the 19th century revealed pipes, canals and underground galleries, vaulted underground rooms, catchments, hypocausts, marbles and mosaics, entablature, capitals and mouldings, etc.

Several sources (Eugénie, César, Saint-Mart, Saint-Victor) were captured in early Roman antiquity, and have been the subject of ancient but precise descriptions, especially concerning the concrete wells and fir boards.

Located on the ancient site that they have largely destroyed, and reusing the same sources, together with the drilling of new ones, the current baths cure rheumatism and cardiovascular diseases. These are generally bicarbonated, chlorinated, sodium-rich and highly gaseous waters at their emergence, with temperatures ranging from 27° to 34°C.

This site was the subject of a first in-depth review (in González Soutelo 2024: 26-41), following the publication of data in the *Atlas topographique de Clermont-Ferrand* in 2021 (Vallat, Le Barrier 2021, volume 2, sheet 39: 161-170). This communication focuses on the verification of old data and the systematic referencing of documentation (archives and artefacts).

Keywords: pilgrimage, spa town, Augustonemetum

Thermal baths of Aquae Segetae/Moingt (France)

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The *Aquae Segetae* baths, which are listed on the Peutinger Table, were formally identified in the 19th century in a vast property called the clos Ste Eugénie in the town of Moingt, near the Bollène road, now associated with the city of Montbrison. After the last owner left in 1990, the clos Ste Eugénie was acquired by the city. This acquisition was immediately followed by archaeological evaluation work to clarify the extent of the remains and their heritage potential. In my role as archaeologist attached to the Afan, I carried out a study of the elevations of the thermal baths and its theatre, while a series of surveys on the ground were also undertaken.

Probably occupied since antiquity, the baths constitute a vast set of buildings that testify to various uses: poor-quality housing in the ruins of the baths, a priory with a chapel, a convent, a weaving workshop and a bourgeois house. Despite many redesigns, the outlines of the baths are still clearly visible. Intact elevations up to heights of 9 to 12 m make it possible to discern the major redevelopments which took place during antiquity.

The thermal baths lie within a vast property of about 2 hectares without subsequent construction, which should mean that the entire monument and its development can eventually be explored. The surveys were not able to identify the source used by the thermal baths directly. Only analyses of water on the property have been used to reveal a bicarbonated water gas.

The overall project of the development of the ancient thermal baths of Moingt is currently underway, with the layout of the entire building now visible, and the chapel and an adjoining building adapted to create a reading room.

Keywords: Aquae Segetae, Moingt, Peutinger Table, thermal baths

[Poster] The AQVAE project. The Aix-les-Bains spa in Roman times (France): Documentary review, study and valorisation of a remarkable heritage site

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The spa town of *Aquae* (Aix-les-Bains), located to the east of the city of Vienne, contains remarkable remains from the Roman period. These include an arch and an elevated temple, the remains of a major spa complex, and a collection of statuary and epigraphs attesting to the importance of this spa in the Imperial period.

Interest in these remains, recognised as being ancient as early as the Renaissance, has resulted in a wealth of documentation. In the absence of a review of this material, and in response to considerable demand, the AQVAE project was set up to collect, study and promote all the archaeological documentation concerning the spa town. The project is led by the *Conservation départementale du Patrimoine de la Savoie* in partnership with the *Archéologie et Archéométrie* laboratory (UMR 5138 ArAr).

This contribution presents the project, its context, challenges and methodology. The project is divided into three main phases: the first of which is an assessment of existing documents, the second a study of the remains, and the third a synthesis and heritage enhancement.

Now that most of the documentation produced has been collected, we present the first results, notably an up-to-date history of research on the Aix site and a better understanding of the structuring of the monumental centre and how its main monuments were linked.

Keywords: hydrotherapy, spa town, Roman temple, Roman arch, Roman sanctuary

The Aix-les-Bains baths complex (France)

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This presentation covers the entire thermal complex, whose remains are distributed around two hot springs (Soufre and Alun) in use in the Thermes Nationaux building until the end of the 20th century. The Roman remains were excavated as early as the end of the 18th century and are now largely destroyed.

Part of the preserved structure around Alun spring has been classified as a historical monument. It is now located on the second floor of the Thermes Nationaux building, whose development has largely obscured its ancient origins. Following a study of the remains begun in the 1990s, a Master 2 thesis was submitted in 2024 as part of the AQVAE project.

Nearby, excavations of the Hôtel Thermal in 2024 revealed the existence of other ancient re- mains in the vicinity of the Soufre spring. These two areas share several construction phases and a rich decoration linked to the thermal installations.

The focus is also on the Bain Royal, built between the two springs on the site of an ancient bath made of recycled materials, and in use until the end of the 19th century.

These findings attest to the considerable expansion of the Aix baths in antiquity. The remains already bear witness to the existence of large complexes, which were monumentalised over time and which must initially have been richly and colourfully decorated. The studies carried out as part of the AQVAE project, and the excavations of the Hôtel Thermal, offer a global vision and new perspectives for understanding this thermal complex.

Keywords: thermal springs, Roman thermal baths, thermal complex, hydrotherapy, Roman architecture, Borvo, emergency excavations, heritage conservation

[Poster] Thermal water in daily life, uses, choices and requirements: Bourbonne-les-Bains (France)

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In Bourbonne-les-Bains, the rapid deterioration of buildings and the rise of thermalism in the 19th century led to the disappearance of all major structural elements of the thermal com- plex from the medieval and modern periods. The ancient structures, for their part, have only been partially observed. However, historical documents and archaeological artefacts make it possible for us to reconstruct the configuration of these lost facilities and shed light on certain non-curative and sometimes unexpected uses, as well as the challenges posed by this unique environment.

Through examples drawn from historical documentation, we explore practices that the thermal administration sought to discourage, often overlooked due to a focus on the medical or religious aspects of the site. For instance, the rational and hygiene-centred vision of contemporary engineers led to anachronistic interpretations or misunderstandings concerning leisure or utilitarian practices, depending on the period under consideration. Even animals were involved: attracted by the salt, a key component of Bourbonne's waters, they gave rise to some curious legends.

Furthermore, the promotional emphasis on the waters' purported qualities, often driven by com- petition between thermal establishments, frequently overshadowed the significant drawbacks of having salty water continuously gushing from the ground at over 60°C. These constraints re- quired specific choices in terms of construction and infrastructure, which can be investigated to better understand the challenges faced by ancient builders, who encountered broadly similar issues.

Our analysis of the ancient remains of Bourbonne-les-Bains leads us to a conclusion that contrasts with previous scholarship: from a strictly medical standpoint, these baths could not have been curative. On the other hand, the site undeniably held spiritual significance in for the population of the time.

Keywords: healing water, anachronism, sacred spring, thermal baths, water uses

[Poster] One fake to fool them all. Promoting modern thermalism through the use of antiquity and forgery in Luxeuil-les-Bains (France)

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Luxeuil-les-Bains's ancient thermal past has been documented by archaeological excavations that took place in the 19th century. Following a period of abandonment, the site experienced a renaissance in the 18th century, largely due to the significant expansion of thermal baths in France during this period. Two periods of renovation work to establish the new thermal baths coincided with the discovery of two inscriptions that are believed to be ancient, linking the ancient thermal baths both to the deities Apollo and Bricta and to Caesar's general, Labienus. Further analysis has revealed that these two inscriptions are in fact false, based on the epigraphic form and the engraving technique used in the reception hall of the spas.

The archives and the analysis of the two inscriptions provide a more comprehensive understanding of the decision to use the ancient Luxovian period to legitimise the new works involved in rebuilding the modern baths and to promote them. The venture proved to be a success: the inscriptions, which mention Gallo-Roman gods and a famous historical figure, were used for promotional purposes and were mentioned until the 19th century in descriptions of the Luxeuil thermal baths. However, they were later revealed to be false by scholars specialising in Latin epigraphy and were forgotten.

The aim of this paper is therefore to present the probable context in which the two inscriptions were produced, in order to revive interest in the 18th-century renovation of the thermal baths.

Keywords: Luxeuil-les-Bains, forgery, epigraphy, reuse, stelae

[Poster] Votive altars as a testimony of the medical benefits of thermal springs in the Central Pyrenees (France) during the Roman period

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According to Strabo, the therapeutic use of mineral water sources in the Central Pyrenees was begun by the Romans more than 2000 years ago. Several hundreds of votive altars dating back to the Roman period have been found in this zone. They are made of marble extracted from neighbouring sites and dedicated to various Roman or local deities. Some specimens include indications of the medical properties of Pyrenean spring waters. These are dedications to autochthonous goddesses related to the sources, for instance the Nymphae (about ten cases), in particular the altar of *Valeria Hellas*, and those of *Severus Seranus* and *Ilixo*, which gave its name to the present-day thermal city of Luchon. The so-called 'Sembedo altar' was dedicated to Emperor *Augustus* and is currently in the central hall of the main spa building of Bagnères-de-Bigorre. One can speculate that these votive objects are almost certainly considered as thanks offerings for good health, healing, fertility or other favourable outcomes attributable to the waters. Because of the absence of anatomical votives we are unable to determine the precise nature of the underlying diseases. Of note, these 'ex-voto' suggest that people of both sexes (objects were offered in comparable proportions by males and females) and even slaves benefited from the use of balneotherapy in the Pyrenees at that time. They represent an example of syncretism and illustrate the interconnections between medicine and religious beliefs which have been observed worldwide since the beginning of human civilisation.

Keywords: Pyrenees, votive stones, healing spas, Roman medicine, Gallo-Roman deities

Interpreting bathing establishments: curative baths outside spas?

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It seems that there was already a clear distinction between curative and hygienic baths in antiquity, a fact supported by archaeology, hydrogeology and the study of ancient texts. Curative baths are characterised by their installation on or near a thermal spring with recognised medicinal properties - moreover distinguished by the continuity of their use over time - as well as by a specific planimetric organisation based on a succession of basins. In addition to these material constants, ancient texts highlight the medicinal virtues of certain waters, in contrast to the so-called artificial waters used by hygienic baths. The latter, which underwent unprecedented development throughout antiquity (and in fact disappeared with it), were powerful markers of *Romanitas*, with their characteristic architecture and codified thermal itineraries. On the basis of the above criteria, the presence of curative baths outside spas seems a priori impossible. However, the term "curative" can be used to designate bathing establishments which, by virtue of their planimetric layout, could be understood as health-care establishments. In addition to these plans, which may indeed raise questions, there is a corpus of inscriptions relating to baths with therapeutic virtues, discovered on sites not recognised as spa resorts. We therefore need to find clear distinctions between the plans for so-called curative baths and those for hygienic baths, and question the interpretation of these inscriptions, which are de facto associated with curative baths. Are we to conclude from this that bathing establishments which did not exploit a recognised thermal spring were "falsely advertised" in antiquity? Or is it possible that the intrinsic virtues of the thermal course in the hygienic baths, based on temperature contrasts, were recognised as beneficial in themselves? By taking a tour of different parts of the Empire, and focusing on the city of Lyon, this paper aims to question the seemingly obvious distinction between salutary and recreational baths in antiquity.

Keywords: Lyon, curative baths, hygienic baths, thermal springs, artificial waters

[Poster] The Antiquaille thermal baths in Lyon (France)

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In 2019, a preventive archaeology dig uncovered the remains of a thermal bath in a well- known district (the Antiquaille) of the ancient city of *Lugdunum* (present-day Lyon), close to the theatre and odeon. Established shortly after the founding of the colony, this high-quality facility lasted until it was abandoned in the early 3rd century CE. Several phases of restoration can be seen throughout its period of use. Set up in the 30s and 20s BCE, the first phase, which had only limited use, consisted of a rectangular room with an apse in the southern part. Traces of terracotta floor tiles in the demolition levels indicate the presence of basins. In the first part of the 1st century CE, a new building plan became visible. A small circular heated pool, originally decorated with a mosaic and marble plaques, was combined with a rectangular pool, probably for cold water, and a second, larger circular heated pool. An analysis of the layout, albeit incomplete, and the equipment present, would suggest that this was not a classic health spa, but rather a therapeutic spa, probably a public one. This type of establishment, which was fairly widespread in the Roman world and also in Gaul, was not necessarily supplied with curative waters. Numerous examples show that they operated with ordinary water supplied by the aqueducts. This is probably the case for the Antiquaille thermal baths, which must have been supplied by one of Lyon's aqueducts. In the middle of the 2nd century, a major renovation campaign took place. Restoration work was carried out on all the rooms and the complex was abandoned at the beginning of the 3rd century. This is the second thermal bath to have been discovered in this part of the ancient city, following the one in the rue des Farges, although the latter was used for hygiene reasons. Possibly the baths of Apollo, mentioned in a funerary inscription found in the 19th century in the Saint-Georges district, are actually those of the Antiquaille. Finally, a fragment of a commemorative marble plaque attributed to a Roman knight and imperial procurator was discovered in the demolition levels of the site. This fragment complements another item unearthed in the 19th century in the Saint-Jean district. Was this inscription originally placed in the Antiquaille thermal baths? It should be remembered that in Gaul, as elsewhere in the Empire, the baths could be managed by the emperor himself, by members of his family or by aristocratic families who saw it as a substantial source of income.

Keywords: Lugdunum, therapeutic baths, Antiquaille district, pools, public monument

Healing me softly with gods: Pleasure, satisfaction and healing in the late antique thermal bath Banja Bansko (Strumica, Republic of North Macedonia)

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The focus of this presentation is the thermal bath of Banja, located near the village of Bansko in the Strumica region (The Republic of North Macedonia) through the lens of ancient religious practices, utilising archaeological artefacts that illustrate the spiritual significance of this site. There have been ongoing archaeological investigations at this location for nearly 45 years, during which a wealth of archaeological evidence has been uncovered, shedding light on the development and transformation of the area. These findings indicate that the origins of the spa are linked to the sacred Parilo spring (parilo – steam or vapor), dating back to the 4th century BCE, followed by the sacred cave – grotto, the Temple of Hermes and extending into the first years of the 3rd century CE when the notable Great Bath was constructed. The archaeological excavations uncovered various structures and archaeological artefacts that also highlight not only the therapeutic qualities of the site but also its hedonistic dimensions, thereby adding to the religious identity of the thermal spa.

Archaeological and natural structures, including the sacred Parilo spring, the sacred cave - grotto, the Temple of Hermes, and the Great Bath, are complemented by archaeological artefacts such as a terracotta figurine of Aphrodite, several sculptures of Hermes, a votive inscription dedicated to Hermes, and representations of Satyr and Apollo, alongside depictions of the healing deities Asclepius and Hygieia. In light of this information, this presentation aims to underscore several key aspects that reflect the religious significance of the site:

- The sacred nature and essence of the thermal waters as perceived by people in antiquity.
- The sacred cave - grotto and its dual connection to both the sacred and the hedonistic experiences of pleasure and enjoyment.
- The Temple of Hermes and its relationship not only to the sacred qualities of water but also its relationship to other deities and personifications.
- The healing deities Asclepius and Hygieia as primordial entities in the therapeutic practices of the Great Bath.

Keywords: Thermal bath, grotto, sacred water, ancient deities and personifications

The baths of the governor's palace of Pannonia Inferior: a private thermal bath? (Budapest, Hungary)

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The Hungarian capital, Budapest, is very rich in thermal medicinal springs, the water of which is still used by famous spas and medicinal baths. Thermal springs rise up naturally on the Buda side of the Danube. Three specific groups of thermal springs can be distinguished here: the springs of Gellért Hill, the springs of József Hill and the North Buda karst springs. In addition, thermal water springs up along a tectonic line running across the bank and the islands of the Danube between the József Hill thermal springs and the North Buda karst springs. In my previous presentation at the conference held in Madrid, I presented research on the inscriptions and archaeological finds which demonstrated the Roman use of the healing springs of József Hill. The aim of this presentation is to examine the Roman use of the thermal water line running across the bank and the islands of the Danube between the József Hill thermal springs and the North Buda karst springs.

The governor's palace of the Pannonia Inferior province was on one of these islands in the Danube, on the so-called Small Island. Its construction began at the beginning of the 2nd century CE. It was expanded and rebuilt several times during the 2nd and 3rd centuries. It was evacuated in the last third of the 3rd century. The remains of the palace were discovered in the middle of the 19th century during construction work on a shipyard. Between 1854 and 1856 three bathing rooms with a large oval pool were excavated here. The next archaeological investigations were not carried out until the middle of the twentieth century. At this time most of the main building of the governor's palace complex was excavated. According to the results of these excavations the baths were part of the Northern wing of the palace together with the governor's private suite. Further archaeological and geological observations in the 1990s show that calcareous, sulphurous springs sprang up in the northern forecourt of the palace.

Thermal water also rose up further along the same tectonic line, on Bath Island. In the 19th century, Roman walls were observed here, therefore it was supposed that the Romans built their healing spas here. Unfortunately, this island was completely destroyed by dredging between 1872 and 1875, and there is no documentation of any Roman remains present. The springs still rise up where the former island was located.

Keywords: Pannonia Inferior, governor's palace, thermal bath

Aquae Flavianae (Algeria): a millenary heritage

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The phenomenon of spa tourism in the Mediterranean world from antiquity to the present day has encompassed different approaches: in European countries it has alternated periods of great popularity with periods of abandonment or neglect, while in countries with an Arab tradition it has remained alive over time thanks to the deep-rooted culture of the hammam.

The French bequeathed a phase of monumentalisation to Algeria between the end of the 19th century and the first half of the 20th century, which was applied to the thermal centres, which then opened up to a wider European clientele. The rediscovery of spas of Roman origin, on which the new establishments were superimposed, is fortunately documented in many cases thanks to the early archaeological research, which "fixed" structures over time, and finds that are now only partially recognisable or scattered.

Today, the spas in Algeria are still mainly frequented by locals, thanks to the low cost of entry and the separate areas (both changing rooms and swimming pools) for men and women. But what remains of the ancient spa tradition that began in Roman times? Are users aware of the historical and cultural significance of the places they visit?

The case of *Aquae Flavianae*, near the present-day town of Khenchela, north of the Aurès mountains, is emblematic: the modern reception facilities incorporate the ancient swimming pools, which were uncovered and miraculously preserved, even if they were reserved for male customers. New pools have been built for women, strictly indoors, with changing rooms and common areas separate from the men's area. The arrangements for the water are clearly visible. The water is very hot at source, and then diverted to flow outside to lower its temperature before entering the pools: this system was already in place in Roman times, as documented in some literary and graphic sources. However, today's visitors are not offered any information about the 2000 years of history that enrich this extraordinary bathing complex. The spirit of Aesculapius, whose niche that housed his statue in Roman times is clearly visible, still watches, but remains unknown and unheeded.

Keywords: Aquae Flavianae, Numidia, spa, cultural heritage, knowledge

[Poster] The healing spas of Baden-Baden (Germany) revisited: 179 years of archaeological research

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The Roman town *Aquae* (Baden-Baden, Germany) situated in the northern part of the Black Forest was founded under Emperor Vespasian to make use of the thermal springs in the area. It quickly grew into a flourishing settlement, with two major bath complexes known today. The thermal baths using the hot springs at the Florentinerberg, the so-called imperial baths, were first excavated between 1846 and 1848 by the local association for antiquities. After documentation, the site was backfilled and remained underneath the paving of the modern marketplace. While the documentation from 1848 was rather good for its time, the site did not get much attention afterwards, and the old drawings and brief descriptions were not expanded upon for a long time. It was not until the second half of the 20th century that small excavations were carried out in the southern area of the Roman baths and provided new insights into construction phases and previous buildings on the site.

A recent project at the State Office of Monument Preservation in the Regional Council of Stuttgart, Baden-Wurttemberg, in 2022, aimed to bring together all previous knowledge on Roman *Aquae* in a geographical information system (GIS) to map all excavated structures and to provide an overview of what is known today about the Roman town. A new and up-to-date plan of the imperial baths was also produced, which gives a better understanding of the thermal baths and their surroundings.

Small-scale excavations in 2023 and 2024 preceding construction work provided new insights into the preservation of the baths and unearthed new parts of the building complex. These revealed the area in which the old excavations from the 19th century had taken place, allowing the quality of the old documentation to be assessed, and revealing the state of preservation of the old structures.

Keywords: Baden-Baden, healing spa, pre-modern excavations, GIS, modern small-scale excavations

[Poster] Aquae Balissae (Croatia): history of discoveries and collections from the 18th-20th centuries

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The present-day city of Daruvar in continental Croatia is known from Roman sources as *Res Publica Iasorum*, *Municipium Iasorum* and *Aquae Balissae*. The first Roman finds were recorded in the second half of the 18th century, after the expulsion of the Ottomans/Turks in 1698, and the establishment of the Habsburg monarchy. The Daruvar area with its geothermal springs (Turkish *Ilidze* = Spa) was at the westernmost border of the Ottoman Empire beyon which there was a "no man's land" (*terra nullus*) which extended to the Austrian Empire. Roman monuments, mainly stone imperial inscriptions and ruins of Roman baths, were recorded by high government officials or travel writers of the Habsburg monarchy who first visited Daruvar. In the two hundred years leading up to the early 20th century, monuments such as Jupiter's altars, public imperial inscriptions, tombstones and sarcophagi, were placed in the park of the Baroque palace of Count Janković. Some monuments were sent to the National Museum in Zagreb (today the Archaeological Museum in Zagreb), such as fragments of the large equestrian monument of Emperor Gordian III. The Roman monuments that remained in the palace park after the end of World War II in socialist Yugoslavia were also sent to the Archaeological Museum in Zagreb, following the construction of a large bronze monument in the park to those who had died fighting against the Nazis and the fascist occupation. The only archaeological artefact that was sent to Budapest and then Vienna after its discovery in 1785, and bought by famous antique dealer, is a *diatretum* cage cup. Other objects found from 1960 to the present day during an inventory of the Silvanus temple were integrated into the Daruvar Homeland Museum Collection, founded in 1971, though it was not professionally curated. The collection was closed in 1987, and in 1991, at the beginning of the Croatian War of Independence it was looted, and construction of the Daruvar City Museum interrupted. It is important to note that the first archaeological excavation in Daruvar was only carried out in 1994 when an inscribed stone pedestal from the monument of Empress Plautilla was found. By then, in the mid-90s, almost the entire area covered by the former Roman municipium *Aquae Balissae*, including the forum, thermal-public complex and residential part of the settlement, had been urbanised and built over by modern residential and other buildings.

Keywords: Aquae Balissae, archeological findings, history of discoveries, museum collection

Session 2. Studying ancient healing spas: new tools, new approaches

A geoarchaeological approach to hydrothermal carbonate deposits from Roman baths in Jebel Oust (Tunisia)

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Located about 42 km southwest of ancient Carthage (in northern Tunisia), the hot spring of Jebel Oust is an exemplary model of the interactions between travertine - i.e. deposits from hydrothermal waters - and human activities and thermal practices. Several analyses (stratigraphic, petrographic and geochemical) were conducted in order to understand the management of this hydrothermal water in this site. The exploitation of this hot spring since Roman times has led to the transition from a natural gentle slope deposit model to one with anthropogenic control effects on how carbonates were deposited. This results in a larger diversity of morphologies and facies of the travertine. The ancient sanctuary built just above the vent of the hot spring is dominated by iron-rich hydrothermal deposits. A deep underground aqueduct, providing hot water from the spring to well-preserved Roman baths located downstream, is mostly filled with puff-pastry travertine and some terrigenous sediments. Finally, the travertine preserved in the Roman baths shows several morphologies and facies due to the diversity of human structures. Hot pools are filled with alternate dark/bright laminated travertine, whereas the tepid ones are characterised by alternate dense/porous laminate deposits - marked by a biological influence - and pools used as tanks (colder waters) are filled with spongy fabric travertine showing higher isotopic values of δ13C and δ18O. Facies of water canalisations and pipes, with a well-known particular morphology, and some crystalline crust travertine forming small cascades, which are correlated to the decay of the site during Late Antiquity, complete this array of deposits. These anthropogenic travertines reflect strong human influence on the environment and the palaeohydrological dynamics of the hot spring. Moreover, their sedimentological and geochemical features are rich sedimentary records of past human engineering and management of waters. This interdisciplinary approach can be applied to other carbonate-rich hydrothermal sites in order to trace the history of thermal development and the management of their mineral-rich waters.

Keywords: Geoarchaeology, carbonates, water management, Roman antiquity

[Poster] Carbonate deposits from the thermal waters in Vichy (France)

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The thermomineral waters of Vichy have been exploited since antiquity. Thermal springs produce many carbonate concretions, to the point of reducing their flow. Deposits accumulate quickly by precipitation and need to be removed often, as evidenced by the regular cleaning works carried out at the springs since the waters were first tapped commercially in the 18th century. These deposits bear witness to the different phases of activity at the springs.

The first carbonate formations are very ancient. The *rocher des Célestins*, a promontory below the medieval town, rises above the Allier river by almost 15m. It is made up of travertine that was probably deposited during the Cenozoic. It extends from the *Hôpital* spring to that of the *Célestins*, which originates at the foot of the cliff.

To the north, near the *Chomel* spring, carbonate deposits were unearthed during the archaeological evaluation of the *Parc des Sources* in 2021. They predate Roman-age remains of ceramic mortar, probably linked to the exploitation of the spring. At the *Hôpital* spring, an excavation carried out in 2024 revealed Roman remains capped by carbonate deposits, indicating the prob- able end of the exploitation of the source.

This poster aims to present the origin of the thermal waters of Vichy and, based on the results of the latest archaeological work, the different phases of use and exploitation of the springs since antiquity.

Keywords: Vichy, travertine, carbonate concretions, thermomineral water, springs

“It’s the water, stupid!” How to read the history of a healing spa from the its hydrotechnical facilities (Baden, Switzerland)

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To record the diachronic development of a healing spa archaeologically, it is important to start at the source: the springs. The location of the springs and the spring catchments, the topography of the spring area and, last but not least, the gravitational force - water normally only flows downwards - determine which facilities can be built, and where. It is not so much the water supply as the drainage facilities that form the backbone of the bathing facilities and the spa settlement as there is a constant flow of water coming from the springs.

This dependency can be charted over the last 2000 years at the baths in Baden/Switzerland, where we have exceptionally precise knowledge of the function and development of the hydrotechnical facilities from Roman times up to today due to extensive archaeological excavations and research.

The Romans specifically selected the springs intended for utilisation. Their location and filling capacity determined where nymphaea, drinking fountains and baths could be built - and conversely also determined where other uses that did not require a direct supply of thermal water were located.

In many ways, the medieval baths were modelled on the Roman structures, which remained dependent on the still-working Roman spring catchments and drainage system. Extensive hydraulic engineering work in the Middle Ages led to the expansion of the bathing facilities beyond the Roman thermal area. The tapping of further thermal springs in the 19th century once again created expansion and modernisation of the bathing facilities - whereby the existing water sup- ply and drainage system was retained.

This presentation shows which decisions and measures led to the specific development of baths in Baden in Aargau from Roman times to the modern era and how this development can be reconstructed based on archaeological findings of the hydrotechnical facilities and descriptive historical sources.

Keywords: Baden (Switzerland), Roman baths, medieval baths, hydrotechnical facilities, diachronic reconstruction

Managing sacred waters at Bagno Grande in San Casciano dei Bagni (Italy): research and perspectives within an archaeological multi-layered thermo-mineral site

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The thermal sanctuary at Bagno Grande in San Casciano dei Bagni represents a unique opportunity for studying Roman healing spas. Research begun in 2020 has revealed an exceptionally well-preserved archaeological context, in continuous use from 4th century BCE to the present, which offers a privileged insight into 'thermal' structures over a long-term perspective and enables us to understand both the sacred character of the site and the hydrological and medical aspects linked to the thermo-mineral hot spring. In particular, the integration of new data that has emerged from ongoing research on the Etrusco-Roman structures with that collected from the end of the 16th century demonstrates the multiple ways of exploiting the area around the spring in the broader context of the San Casciano thermo-mineral system, characterised by more than 42 springs with different curative properties.

This paper aims to present the numerous new findings from these excavations together with those that are gradually coming to light from previous studies in order to reconstruct the diachronic development of Bagno Grande in a *longue durée* perspective, starting from the Etrusco-Roman period. The analysis presents the relations between the chemical and physical properties of the water - the study of which is a crucial part of our research project - and the medical practices clearly documented at the sanctuary, thanks to the significant quantity of artefacts discovered inside the sacred pool. This offers new tools for the methodological re-reading of other thermal sanctuaries connected to thermo-mineral waters.

Keywords: San Casciano dei Bagni, hot water, Roman sanctuary and healing spas, thermo, mineral spring, medical practice

Votive devotion and trade networks: Analysing a relief dedicated to the nymphs from Aquae Calidae in Roman Thrace (Bulgaria)

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Votive reliefs served as an expression of religious devotion in Roman Thrace, and thermal sites are a good source of these. One of the preeminent healing locations in Thrace was *Aquae Calidae*, where thermal baths were built as early as the 60s of the 1st century CE. This paper examines a votive relief dedicated to the Nymphs (Burgas Museum, inventory number 1184, sometimes referred to also as IG Bulg I 380), which was recovered from the sacred spring in 1910. The artefact in question represents the Nymphs as the Three Graces and features an inscription naming the dedicator. This study adopts an interdisciplinary approach, analysing not only the iconography but also the inscription. Furthermore, it explores the ex-voto itself – a reused marble architectural element.

Investigating the provenance of the artefact in a region lacking local marble deposits provides valuable insights, particularly in the context of the expanding database of the Roman marble trade network. Analytical methods such as stable isotope analysis (C13 and O18) and multi- element trace element analysis via ICP-MS have been employed to determine their origins. This study offers an opportunity to explore the regional marble trade, including the distribution of raw materials and finished products. Evidence of marble sourced from Prokonnesos (III) reflects the diversity of material sources and highlights the site's strong connections to interregional trade networks.

The study of IG Bulg I 380 presents an exciting glimpse not only into the ritual practices concentrated around mineral springs but also into the worshippers at the site and its "votive economy".

Keywords: Aquae Calidae, votive relief, thermalism, archaeometric results

Beyond wellness. Geography of the thermo-mineral waters in central Italy from a long-term perspective: management and valorisation

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Recent approaches to the study of ancient thermo-mineral waters and their frequentation have increasingly highlighted how their use was linked not exclusively to their sacred characters or strictly to the well-being of bodies and medical practices, but to a more complex series of interconnections. For instance, the polysemic aspect of 'hot' water as a productive and economic resource clearly emerges from a detailed study of the network of ancient thermal sites that functioned as places that attracted and concentrated related socio-economic and symbolic dynamics. Their presence as structuring elements of the surrounding landscapes has to be considered as the primary characteristic that has ensured their long-term survival as places of aggregation and has guaranteed their preservation as a shared cultural and material heritage up to the present day. By taking various archaeological thermal contexts in central Etruria into consideration, which were first studied and published in the late 19th century, this contribution aims to re-consider them in a *longue durée* perspective, from Etruscan times to the modern age, also employing an ethnographic lens. We investigate new symbolic, material and social conditions that have made thermo-mineral waters favoured places of encounter and negotiation on different levels from antiquity to the contemporary age.

Keywords: Healing spas, San Casciano dei Bagni, Etruscan and Roman, Tuscany

The thermal landscape of the Central Sredna Gora Microregion, Bulgaria, in the Roman Period

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The Central Sredna Gora microregion, situated in present-day Central Bulgaria, is characterised by its distinctive geological features, which contribute to the area's remarkable thermal potential. Home to numerous mineral springs, many of these sites have drawn visitors for millennia, dating back to the Roman period.

The clusters of springs in Hisarya have historically attracted a significant number of visitors, establishing the area as a notable spa destination. In contrast, other springs in the area, such as those at Strelcha and Krasnovo, were frequented during the Roman period, albeit on a much smaller scale. In turn, numerous springs in the vicinity seem never to have captured the attention of ancient populations.

This disparity prompts essential questions about the differing development of the sites. What factors led to the ancient population's selective attraction of particular springs? This paper employs an interdisciplinary approach to explore these questions by analysing archaeological evidence from the springs in conjunction with the region's overall settlement landscape and road network. Additionally, it takes into account the local characteristics of the microregion, including the cultural context of the indigenous Thracian population and the pre-Roman history of Central Sredna Gora.

The high concentration of sources in Central Sredna Gora presents an insightful perspective on Roman thermalism, which is unparalleled in the province of Thrace.

Keywords: thermal landscape, mineral springs, Thracians, Central Sredna Gora area, Roman Thrace

Thermascape: a proposal to analyse thermalism from pre-Roman times to the present day from a spatial point of view

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Thermal and mineral-medicinal waters have aroused great interest from ancient times (and certainly before), thanks to the multiple possibilities associated with them, whether for health, practical or religious reasons. Thus, we have evidence of this value, dating back to pre-Roman times, as a very rich heritage, documented in written sources, but above all through direct or indirect archaeological evidence associated with these springs. In addition, there have been multiple reuses of the sites over time, which also demonstrates the uniqueness of this mineral resource and its importance to the present day. The emergence of new technological advances with their associated methodologies opens up new possibilities for research into this phenomenon by multidisciplinary teams. Along these lines, in order to assess the role of this natural resource from a diachronic and holistic perspective, within the national R&D&I project *Thermascape* (PID2022-138809NB-I00) we are considering different geospatial tools accessible on the internet that allow us to bring together the work being carried out in different territories, taking into account all the interconnected aspects that form part of this phenomenon. Achieving this goal entails managing a large amount of data of a very diverse nature adequately and in a standardised way, and over a long timeline. While there has been a move over the past few decades for archives to open up their records to the online world, adding to the vast amount of digital archaeological information available, it is necessary to go one step further. In order to make the results of research useful, accessible and reusable, we propose as a first step the need to transform historical and archaeological data into digital and interoperable geographic information. Thus, we are creating a geo-historical Spatial Data Infrastructure (SDI) on thermalism. From this SDI, we hope to identify indicators that enable us to establish an overview of thermalism and its evolution, as well as the constructive, cultural, historical and socio-economic characteristics associated with these waters from a diachronic perspective. The ultimate aim of this project will be to contribute, and make accessible, the most detailed knowledge possible, at different scales and in different places, in order to generate products that are available, dynamic, reusable and open to future research.

Keywords: Project Thermascape, geotechnologies, spatial analysis, geohistorical Spatial Data Infrastructure

In the ruins of Baiae (Italy): Ancient walls viewed in present-day light

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This presentation describes and illustrates the excavation of the *Parco archeologico delle terme di Baia* and the simultaneous reconstruction under the direction of A. Maiuri between the 1940s and 1960s. This is followed by a presentation of the non-invasive methods for documenting and surveying the complex landscape of ruins in the archaeological park of Baiae, which were carried out by the Archaeological Institute of the University of Cologne between 2014 and 2017. The opportunities, but also the challenges and new insights gained from these investigations will be presented.

Keywords: Baiae, A. Maiuri, non-invasive prospection and documentation

See Naples and die: Bones and burials at ancient healing spas

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A study of burial sites and human remains at ancient Roman healing spas can substantially contribute to a deeper understanding of diseases, the medical treatment offered, and issues relating to social history.

Human remains from ancient spas have often played only a secondary role as a tool for obtaining an approximate date for the abandonment of the bathing facilities. Research in the immediate surroundings of thermal baths, where cemeteries are often located, was rarely undertaken, or is scarcely published. Early excavations may not have studied the bones found: osteo-archaeology and paleopathology emerged only recently as new branches of archaeological research. Thus, the material central to this paper has never been treated in a comparative study.

Religious studies, medical history, archaeology, and epigraphy supply supporting evidence and facilitate this new approach to the study of burial sites at Roman healing spas. Anatomic votive offerings and the curative qualities of water mentioned in ancient medical texts document success stories, while the grave contexts and funerary inscriptions tell us about failure, and those who did not survive.

The analysed material can give further insight on gender, age, and social class of people who frequented the beneficial waters.

Case studies of burials at ancient Roman healing spas are known from across the Roman Empire, and from the first century BCE to Late Antiquity. Some isolated epitaphs from *Aquae Tauri* (Civitavecchia, Italy) and the entire skeletons excavated in *Aquae Flaviae* (Chaves, Portugal), to mention only two examples, show the diversity of material available.

Keywords: burials, epitaphs, human remains, paleopathology, thermal water

Pools and circular structures in Roman spas. A proposal for an architectural analysis

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The presence of circular vaulted rooms, with equally circular pools, is a common feature in bathing buildings with mineral-medicinal waters. However, in many cases we do not know their original configuration, which would provide insight into their functionality and use, or the possible construction methods that might have existed in poorly preserved or destroyed buildings.

For this study, a detailed analysis of more than twenty pools and circular structures belonging to healing spa facilities from the Roman period has enabled a typological classification to be drawn up based on the preserved structures and the construction techniques at each site. The main aim is to study the design criteria in greater depth, including a metrological study to create reconstructive hypotheses for those buildings, as well as the analysis of circular pools typologies and the materials used in their construction.

Therefore, this work addresses various aspects of these circular spaces and structures: on the one hand, the search for the geometric basis of the design and the modulation patterns that conditioned their layout, considering a typological classification based on the analysis of the floors studied; on the other hand, the analysis of the constructive techniques employed at the different sites, comparing them with metrological values. Finally, a statistical study will be carried out to predict the dimensions of incomplete architectonical models to carry out virtual reconstructions.

Keywords: architecture, metrology, virtual restauration, domes

Session 3. Preserving, restoring and promoting thermal heritage: challenges and strategies

Studying and promoting vanished remains: the Mont-Dore curative spa complex (France)

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The monumental ancient thermal baths of Mont-Dore (Massif Central, France) were built on the NE slopes of a large volcano, the 'puy de Sancy', in the high valley of the Dordogne river, at an altitude of 1,000 metres a.s.l. The remains of a complex consisting of a large building with hot-water pools, a courtyard and a temple were discovered and destroyed when the modern thermal baths were built in the early 19th century. The hot mineral springs (between 32°C and 44°C at the surface) were reused in the new establishment, irreparably disturbing the ancient remains. All that remains is a plan of the vestiges and a scattered collection of lapidary objects, which are difficult for visitors and curious onlookers to understand and interpret. Almost nothing else is known about the ancient settlement. The site was the subject of an initial essay in 1926. Following the discovery of lapidary blocks during the demolition of a hotel in 2006, we formed a multidisciplinary team (archaeologists, architects, a sculptor, a geologist, an art historian, an archivist, a paleoecologist, and a film-maker) in order to complete the study of this monumental complex in 2020.

The heart of the matter: the corpus of architectural components

The 19th-century excavations yielded an interesting corpus of lapidary objects (136 ancient fragments, 97 of which have been preserved) which are exhibited on site, in the spa, in the streets and gardens of the town, and in the 'Musée Bargoin' in Clermont-Ferrand. We began by systematically taking samples of the material used and carrying out an exhaustive high-resolution digitisation phase to study the architectural decorations. The 3D reconstruction of the thermal complex is currently underway.

Studying remains that have disappeared: how can we make progress?

Since most of the remains have been moved or have disappeared, the study of various archives, such as old publications and testimonies of all kinds has been a decisive step in clarifying and consolidating the archaeological data. Some of the ancient building materials, for example, were reused in modern masonry. The economics of the construction site was examined from a technical angle, with research into ancient quarries. As for how long the baths were in operation, this is difficult to assess due to the lack of archaeological material collected in situ and preserved to this day. To make progress on these issues, paleoenvironmental studies (including datings, magnetic susceptibility, palynology and fire indicators) are also being carried out on long-term archives accumulated in a peat bog very close to the ancient complex of Mont-Dore. This research is currently underway, and the first results will be presented at the conference.

Enhancing the value of invisible remains

The corpus of architectural block remains is of interest to visitors to the town and the spa. As the general public and local councillors want to know more, our entire programme was filmed and recorded, providing material for several short documentaries that can be viewed online on canal-u.tv (produced by the MSH, Université Clermont Auvergne, Clermont-Ferrand). The architectural study has led to the creation of a virtual interactive model of the architectural complex (produced by ICONEM, funded by SUDOE Cultur-Monts), which is currently in progress. This approach has been supported by an experimental archaeological experience to reproduce a lioness fountain structure discovered in the ruins of the spa.

It is really the combination of approaches via the study of architectural components, the textual archives (19th-century descriptions and iconography) and the natural archives (paleoenvironments) using visual technologies (3D scans and models, films) and experimental archaeology that makes it possible to talk about and interpret the disconnected or even invisible remains of antiquity.

Keywords: corpus of architectural components, 3D reconstruction, paleoenvironment, development, experimental archaeology

From discovery to reclamation: the chaotic history of the ancient spa at Aquae Sextiae/Aix-en-Provence (France)

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The hazards suffered by the thermal baths discovered in the heart of the ancient city of Aix-en-Provence are an example of the unfortunate fate that is sometimes reserved for this type of remains. Unearthed in 1920-1921, during the construction of an annex to the municipal thermal baths built in the early 18th century (the Vallon pavilion), they were listed as a Historic Monument in 1922 and developed for a time, before being reburied and disappearing from the collective memory. They were brutally re-exhumed in 1996, during earthworks carried out as part of the restructuring of the spa, which almost destroyed them for good. All that remained was a tiny part, reduced to a 120 m2 island that resisted destruction.

Their excavation, carried out as a matter of urgency, revealed a swimming pool and its foot bath, a second pool, a heating room and a large hypocaust room; it also showed that the swimming pool was supplied by a hot water spring at 27°C, which indicates that this complex was a spa, a vocation supported by the discovery, on the site, of two dedications to the god Borbanus.

More than its architectural features or its state of conservation, it is above all to this part that this complex owes its historical and heritage 'value' today, as well as its symbolic value. As the only known thermal spring in the town in ancient times, it represents the very conditions on which the town was founded, and to the way the ancients viewed it. The ancient name of Aix-en-Provence, *Aquae Sextiae Salluviorum*, the city of the waters of Sextius and the Salyans, as well as its representation by thermal baths on the Peutinger Table, bear witness not only to the decisive role played by the thermal waters in the establishment of the urban site, but also to their renown, as attested to as late as the 5th century CE by Sidoine Apollinaire's praise of them in his carmen 23.

Protected by a crypt since 1997 and visible from the entrance to the present-day thermal baths (which today have nothing left of the thermal baths other than their august past), these remains of the curative thermal baths have lain abandoned for almost thirty years, offering a very poor image of the city's archaeological heritage. Even the contemporary crypt has been damaged by poor ventilation in the building.

Thanks to the impetus given by the creation of a route focusing on the ancient city, these remains are now the subject of a heritage assessment and a feasibility study with a view to a development project. Entrusted to the architects Archigem, this programme has a number of objectives. It includes a heritage component (restoration, enhancement and scenarisation of the ancient remains), a technical component (structural diagnosis of the building housing them and possible modifications), a hydrogeological component (understanding the resurgence network, as the site has other springs exploited in modern times, and the properties of these waters) and, finally, research into possible links between the Vallon building, built in the 18th century, and the archaeological crypt adjoining it.

Finally, this project is of urban interest insofar as it is located on the immediate fringe of a project to redevelop a district in whose development the thermal waters have played an important role. For this reason, it should be the subject of a historical survey, taking into account the long-term history of the spa and the use of these waters for leisure activities.

Keywords: historical survey, urgent excavation, thermal waters, restoration, enhancement and scenarisation of the ancient remains

Archaeology of thermalism in Sicily (Italy), from historiography to new strategies for enhancement

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Sicily represents one of the Italian regions with the greatest number of thermal mineral reservoirs located in different areas, in which there has been uninterrupted use over more than two millennia for curative, religious or productive purposes. This contribution aims to present some case studies illustrating both the structural and infrastructural issues and the historiographical and cultural-tourist ones. Through an examination of the ways in which some thermo-mineral contexts were first used in ancient and medieval times and then discovered or reused in modern and contemporary times, it will be possible to present, on the one hand, some of the critical issues related to the preservation, accessibility and enhancement of ancient remains and, on the other hand, the potential that this extraordinary cultural heritage and the landscape can offer today. The methodology used in the analysis, which is very solid and has already been used for other contexts, combined with a broad chronological and functional perspective, will make it possible to reconstruct the history of settlements at Sicilian thermal mineral springs by emphasising the multiple indicators of use connected to the presence of humans. A series of comparisons will also be made with similar structures from other Italian regions. In the light of the national and international debate on the enhancement of archaeological sites and the cultural context that encourages preservation for tourism, the data presented may help to bring to light possible strategies for the redevelopment of ancient thermo-mineral sites in Sicily and the exemplary value of these remains for restoration and potential promotion strategies on a broader scale.

Keywords: Sicily, thermalism, archaeological settlements, cultural heritage, enhancement

From the Roman thermal spa Aquae Iasae to the modern spas of Varaždinske Toplice (Croatia): history of hydrology, medicine and the use of thermal springs

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Varaždinske Toplice (Croatia) has a rich history associated with its thermal springs, dating back to Roman times, when the thermal spa was known as *Aquae Iasae*. The settlement and development of this area has always been linked to thermal water and its healing properties. The main spring, located in today's park, has attracted visitors since prehistoric times and was used by the Romans as early as the 1st century CE, becoming a place of devotional and religious actions. The spring itself has remained the only source supplying thermal water to the spa buildings to the present day.

With careful building planning (in several phases from the 1st to the 4th century), the Romans organised the area around the thermal spring as a sanctuary, giving the natural phenomenon a 'sacred spring' atmosphere. At the same time, they managed to control the thermal water through a very complex hydraulic system and used it in baths.

Archaeological excavations around the spring have revealed the different methods of capturing water throughout history and the ways in which the surroundings were organised according to the spirit of the time. For the Romans it was a sacred place, as they built a sanctuary around the thermal spring, while in the 19th century it was incorporated into the elegant park adorned with Roman stone artefacts. As early as the mid-19th century, the first archaeological excavations were conducted in Varaždinske Toplice, testifying to a long-standing interest in Roman remains in the area, as evidenced by literature from the 18th and 19th centuries. Today, the spring is located within the archaeological park with the remains of the Roman sanctuary and baths, which have been explored since 1953. The continuous use of the spring's thermal water for the modern spa has created a complex conservation challenge due to the modern drilling and piping incorporated into the archaeological site.

Keywords: Aquae Iasae, Varaždinske Toplice, spring, thermal water, sanctuary

Re-imagining thermal spaces: The case of Terme di San Calogero in the Aeolian Islands (Italy)

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Due to its volcanic and seismic activity, Italy is rich in mineral water springs, which have been used for healing and regenerative purposes since ancient times. These waters have shaped evolving architecture, rituals and practices over time. A remarkable example of this phenomenon is the Terme di San Calogero in Lipari, in the volcanic Aeolian islands in Sicily. This thermal site, with a historical legacy dating from Mycenaean times to the present day, is currently neglected despite its historical significance. Although efforts have been made to restore its importance, it no longer seems feasible to reopen it as a thermal complex. Other proposals, such as transforming it into a "Museo delle Terme", have been planned but untimely failed.

This contribution explores the rich history of the Terme di San Calogero which intertwines Mycenaean, Roman, and the modern thermal complex (1870-1975) followed by its current state of neglect and on to possible futures. The aim is to better understand the significance of the place for the local community, while considering its future integration into the evolving landscape of thermalism. Discussion as to whether adaptive reuse is a viable option or if its original use should be revived will be undertaken. It will also examine local memories and the community's vision for the site's regeneration.

Through transdisciplinary methodology-including archival research, fieldwork, performance, and community engagement, this study aims to contribute to the ongoing conversation about the preservation and reinterpretation of thermal heritage in the Mediterranean. Archival materials, such as *Voyage pittoresque des îles de Sicile* (1778), the *Touring Club guides* (1932-1982), and archaeological research from Bernabò Brea, Cavalier, and La Greca, provide initial insights. On- site research, in collaboration with the Centro Studi Eoliano, are planned to map the current state and potential of the place. Interviews with local stakeholders will be carried out to gather perspectives on the present practices and its role in contemporary life.

Keywords: Bathing culture, heritage, spatial practices, adaptative reuse, commons

Not just a Museum but an experience (Montegrotto Terme, Italy)

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The "Museo del termalismo antico e del territorio" in Montegrotto Terme is an outstanding example of an Italian museum, skilfully combining tradition and innovation to narrate the rich thermal history of the Euganean area. Within its walls, past and present are combined by means of an exhibition tour that transforms a visit into an experience, offering visitors a journey through the history and science of thermalism. The museum displays archaeological artefacts from local excavation sites, tangible evidence of the deep connection between the com- munity and thermal water from ancient times - a precious heritage enriched by a dynamic and accessible approach. Significant emphasis has been placed on integrating modern technology into the exhibition, allowing visitors to "immerse" themselves in the discovery of how thermal waters are formed, gaining a deeper understanding of the impact this phenomenon has had on human history. Visitors can explore a comprehensive interactive database that provides further insight into the relationship between humans and thermalism, learn about the ancient practice of divination, and engage with the reconstruction of a Roman water transport system to observe and experiment with its technical functionality. Additionally, 3D reconstructions of archaeological sites offer a visual journey into the past, enabling direct comparisons between ancient and modern architecture and highlighting the evolution of thermal practices. Another fundamental element is the broader geographical context of Euganean thermalism. A multisensory timeline helps frame this phenomenon within a wider historical perspective, encouraging new reflections on the importance of thermalism from antiquity to the present day. This museum stands as a brilliant example of how innovation can be applied to the study of ancient thermalism, significantly contributing to the understanding and promotion of the archaeological and thermal heritage.

Keywords: Museum, thermalism, cultural heritage, new technology, Euganean Hills

Caldes de Montbui (Spain): A case study of the evolution of Roman thermal heritage over the centuries

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Caldes de Montbui, located in Catalonia, Spain, represents an exceptional case study for Roman thermal heritage due to its unique combination of historical continuity, archaeological significance, and integration within a modern urban context. As the oldest thermal town in Catalonia, its mineral-medicinal waters, naturally emerging at 76°C, have been in continuous use since antiquity, illustrating the enduring relevance of thermalism across centuries.

The Roman baths of Caldes de Montbui, the visible part of an important bath complex, date from the end of the second century BCE. They are the best-preserved Roman baths in the entire Iberian Peninsula and remain embedded in the heart of the town. This integration of ancient structures into contemporary life exemplifies a rare dynamic where heritage and modernity co- exist. Furthermore, archaeological excavations uncovered additional Roman features, with some surprising recent finds.

As a member of the European Historic Thermal Towns Association (EHTTA), the Municipality of Caldes de Montbui exemplifies best practices in balancing heritage conservation with modern spa tourism. Events such as the *Mercat de l'Olla* (the "Market of the Cauldron", a key annual festival) with its thermal cuisine, or the legend of thermal water enacted every July at the *Escaldarium*, both of which actively engage in cultural promotion, render Caldes de Montbui a model for integrating community participation in heritage preservation.

This paper aims to explore the diachronic role of Roman thermalism in Caldes de Montbui, addressing key questions of interpretation, preservation, and sustainable development. By synthesising archaeological data with historical records and modern preservation strategies, the case of Caldes de Montbui provides a comprehensive framework for understanding and protecting the rich thermal heritage of the Roman world. Caldes de Montbui's unique legacy offers valuable insights for the ongoing discourse on the future of ancient thermal sites, demonstrating how historical continuity, archaeological significance, and modern urban integration can coexist and thrive.

Keywords: Caldes de Montbui, Roman thermal heritage, Roman baths, heritage conservation, modern spa tourism, archaeology

Session posters session.
The legacy of antiquity and thermalism today

[Poster] Reinterpreting the Roman curative baths to promote the spa towns of the Massif Central (France)

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The Route des Villes d'Eaux du Massif Central brings together 17 thermal towns and strives to promote the exceptional thermal heritage of its territory. Our association explores different fields of thermal heritage, both in its forms (built, natural or intangible), as well as through history (from antiquity to the future).

Since creating an inventory of this heritage, carried out in 2008, our association has carried out several mediation projects in terms of storytelling (Accros du Peignoir), digital (Therma) and cultural innovation (Culture Bains). This has provided a variety of ways to transmit the cultural value of this heritage to different audiences and generations, particularly young residents:

- In Néris-les-Bains, the travel journal artist, Emdé, sketched and interpreted the Roman swimming pools and other characteristic elements of the spa town;
- At Le Mont-Dore, the thermal baths provide the setting and source for interpretation of *Thermal Luce*, a stained-glass window installation enhanced by digital content, designed by DNMADE students from the Lycée Jean-Monnet in Yzeure;
- In Évaux-les-Bains, the sculptural installation Volcanahita by the artist Yosra Mojtahedi, co- produced with Vidéoformes, highlights the benefits of thermal water known since antiquity and from Iranian mythology;
- In Vichy, workshops led by the Maison de l'Architecture Auvergne were proposed to 50 children from the leisure centre to design their ideal thermal park, drawing inspiration from the history of springs since antiquity;
- In Royat-Chamalières, the mobile game Therma invites young people to discover the ancient period, in search of the spa town's ex-votos.

Our partner cities are carrying out other excellent projects to reinterpret their local heritage from the ancient period. Collectively, the Route des Villes d'Eaux du Massif Central could strengthen this dynamic by developing collaborative projects.

Keywords: networking, mediation, interpretation, innovation, attractiveness

[Poster] Roman thermal heritage: A shared legacy of Europe's historic thermal towns

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The European Historic Thermal Towns Association (EHTTA), certified as a Cultural Route of the Council of Europe since 2010, connects nearly 50 thermal towns across 18 countries. This unique network tells the story of thermalism and highlights the lasting cultural, architectural, and therapeutic significance of mineral medicinal waters. Inspired by its Roman origins, the humanists of the 15th and 16th centuries rediscovered the importance of thermal water for medicine. The historic thermal towns carry this tradition into modern times.

The legacy of Roman thermalism is part of this shared heritage. Many spa towns such as Wiesbaden (*Aquae Mattiacis*), Acqui Terme (*Aquae Statiellae*), Ourense (*Aquae Originis*), Chaves (*Aquae Flaviae*), São Pedro do Sul (*Aquae Flaviae*), and Vichy (*Aquis Calidis*) are located at thermal springs that have been used since ancient times. In many towns, impressive thermal remains from the Roman imperial period can be found and inspire research, conservation, and tourism development.

EHTTA actively promotes this legacy through initiatives that bridge ancient traditions and contemporary challenges. Its projects include the preservation of historic thermal sites, the development of sustainable tourism strategies, and the dissemination of knowledge through European and international collaborations. Events such as the "Café of Europe 2021: *Aquae Urbesque Condunt*" in São Pedro do Sul or "Café of Europe 2025: Restoring Thermal Heritage" in Baile Herculane demonstrate how EHTTA fosters dialogue among its members to celebrate and protect this invaluable heritage.

There are many questions about the role of Roman thermalism within the broader narrative of EHTTA. For example, regarding the continuity of the use of healing waters, the influence of humanistic authors on the development of spa towns, or how the member cities integrate ancient thermal facilities into modern urban and tourist contexts. By means of pushing research programs, exploring successful restoration projects, and promoting thermal heritage as a driver for sustainable development, the EHTTA network makes a significant contribution to the preservation and reinterpretation of European thermal culture.

Keywords: EHTTA, Roman thermalism, Cultural Route, heritage preservation, sustainable tourism, cultural tourism, Spas in antiquity

[Poster] Ancient reflections on the West Bohemian spa triangle (Czech Republic)

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In the western part of the Czech Republic there are spa towns with unique natural and cultural wealth. The local landscape provides people with exceptionally clean air, numerous mineral springs and other natural healing resources. People living in symbiosis with nature has also gradually manifested itself in the way the local environment has been settled and used. The urban districts blend in with the surrounding greenery. Earlier mining activities have ceased due to the danger of disturbing the water resources. The area is also continuously visited by people who come here for physical or mental recuperation.

In response to the increased demand, a number of buildings have been ingeniously constructed over the centuries to facilitate these needs. This applies in particular to the spa facilities, as well as to the landscaping of their surroundings, which lend themselves well to sporting activities, refreshing walks or quiet contemplation. Lavish buildings were built here, particularly in the 19th century, often based on ancient models in terms of typology and appearance - not only their architectural design, but also their sculpture, painting and other decorative ornamentation.

In Karlovy Vary, Mariánské Lázně and Františkovy Lázně there are colonnades and other public or private buildings that strongly reflect the original ancient and Mediterranean elements. Within individual buildings and in the outdoor areas of city parks, themes referring to ancient mythology or the environment of ancient Greece and Rome in general are depicted. Both the decorated facades and the carefully conceived interiors return to the themes of the glorious past and draw inspiration from it. Some of the ancient elements are demonstrated quite clearly, while others appear hidden and need to be searched for in more detail. The origins of European civilisation thus remain part of the cultural heritage, which is accentuated in an excellent way in the unique environment of the West Bohemian spa towns, newly inscribed on the UNESCO list. The aim of the paper is to highlight the importance of the continuity of the original idea of the spa tradition, which is not limited by time or geographical space.

Keywords: ancient traditions, reflections, Czech Republic, West Bohemian spa triangle, thermal heritage

[Poster] 'Letting what is distributed become common property'. Citizens' initiative as a model for the revival of communal urban bathing traditions (Baden, Switzerland)

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'It is not a question of distributing common goods, but of making what is distributed common property,' wrote the papal secretary Giovanni Francesco Poggio Bracciolini in a letter from Baden in May 1416. He recognised a republican idea in the sight of the freely accessible public baths on the central square. This unrestricted access to thermal water existed in Baden until the closure of the open-air baths in the 19th century and has been absent ever since.

Public and freely accessible baths were a fundamental part of Baden's spa facilities from Roman times. They were basic medical services and centres of social interaction. This is where the ancient practice of communal bathing - nota bene in Roman bathing pools! - right up to the modern day.

In recent decades, various building projects and conversions to commercial 'wellness adventure baths' have attempted to counteract the increasing loss of importance of bathing in spa centres. In this development, however, the thermal water has degenerated into a commodity that can only be consumed for a fee. The collective awareness of the immense value of thermal water and the importance of this gift of nature as a common good was awakened, leading to a call for free access to thermal in local society.

In 2012, this inspired a group of committed citizens to campaign for access to, and visibility of, thermal water in public spaces as part of the revitalisation of the baths. The aim was also to establish a new communal, urban bathing culture.

The group 'Bagni Popolari Association', a citizens' initiative, got involved in the planning process and, with the support of private spring owners, installed small prototypical bathing wells in public spaces over a period of several years, which quickly became very popular as alternative bathing facilities that extended far beyond bathing. This proved that freely accessible bathing facilities fulfil a need and can be operated with simple means. Since 2021, two public thermal water fountains have been opened, providing permanent, free access to thermal water for drinking and bathing. Bagni Popolari has been using this experience to develop the current conversion of the historic 'Bad zum Raben' bathhouse in the centre of the Bäderquartier into an easily accessible communal bath and cultural meeting place.

This presentation shows how the new public thermal wells work and the concept that is now being pursued in the revitalisation of the 'Bad zum Raben'. The following aspects are used to show how the projects were developed and what obstacles had to be overcome: ownership of thermal water, social organisation and public bathing culture, hydraulic function, regulatory requirements, political and financial support and funding.

Keywords: Baden (Switzerland), public communal baths, grassroots initiative, bathing traditions, common resource

[Poster] Thermal heritage preservation for future generations: insights from Georgia

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Tangible and intangible thermal heritage serves as enduring legacies of ancient civilisations. The thermal heritage offers invaluable insights into the lifestyles, traditions, and customs of early societies. Among the most significant aspects of this heritage is the historical use of thermal waters for medical purposes, which stands as a testament to the advanced understanding of health and wellness in ancient times.

As a crossroads of diverse cultures and civilisations, Georgia's thermal heritage provides rich evidence of their historical significance, from their use in traditional healing practices to their role in fostering social and cultural interactions. The country's thermal resources underscore Georgia's importance as a focal point for understanding the evolution and preservation of thermal heritage on a global scale.

Since the 5th century BCE, mineral and thermal waters have played a vital role in healing practices across Georgia. Archaeological evidence reveals the enduring significance of these waters, with remains of ancient stone baths discovered in prominent historical sites such as the Armazi Baths near Tbilisi and the renowned baths of Borjomi. These sites offer a glimpse into the advanced understanding of therapeutic practices in antiquity, reflecting the deep connection between the natural environment and health traditions in Georgia.

Today, Georgia is home to nearly 2,000 mineral and thermal springs, each with its unique chemical composition and therapeutic properties. These springs have been a cornerstone of both local culture and international wellness tourism, attracting visitors seeking both physical rejuvenation and cultural experiences.

This paper explores the historical, cultural, and scientific significance of Georgia's thermal heritage, focusing on key discoveries and the challenges associated with preserving these resources. By examining case studies and preservation efforts, the paper underscores the potential of Georgia's thermal heritage to foster thermal heritage development and promote thermal tourism.

Keywords: Thermal, heritage, history, medical, health

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