

SPA
SANITAS PER AQUAM

Tagungsband des Internationalen Frontinus-Symposiums
zur Technik- und Kulturgeschichte der antiken Thermen

Aachen, 18.-22. März 2009

Proceedings of the International Frontinus-Symposium
on the Technical and Cultural History of Ancient Baths

Aachen, March 18-22, 2009

Bearbeitet von
Ralf Kreiner und Wolfram Letzner



PEETERS

Leuven - Paris - Walpole, MA

2012

INHALTSVERZEICHNIS

Abkürzungen	IX
Grußwort des Präsidenten der Frontinus-Gesellschaft e. V.	XI
RALF KREINER Das Aachener Thermensymposium 2009 <i>Hintergründe und Verlauf</i>	1
Öffentlicher Abendvortrag	
ANDREAS SCHAUB Aachen als römische Bäderstadt	11
Vorrömische Anlagen	
MAJA AUFSCHNAITER Bronzezeitliche Sanitäranlagen im ägäischen Raum <i>Eine Besonderheit?</i>	23
MONIKA TRÜMPER Gender-Differentiation in Greek Public Baths	37
KARL STROBEL Thermenanlagen in Kleinasien: Romanisierung der hellenistischen Urbanität	47
Heilthermen	
JENS KÖHLER Tradition und Fortschritt in Römischen Thermalbädern	57
HANS ULRICH NUBER Die römischen Schwefelwasserthermen von <i>Aquae</i> -Bad Gögging, Stadt Neustadt an der Donau, Lkr. Kelheim	65
JAVIER ANDREU PINTADO VBI AQVAE IBI SALVS Verbindung zwischen Gesundheit und Religion in den Thermen des Römischen Hispanien	71
SILVIA GONZÁLEZ SOUTELO Thermal Spas in the Roman Age <i>An approximation to the architectonic configuration of baths with mineral-medicinal water in Hispania</i>	79
Archäologische Befunde	
MATILDE CARRARA Die Badeanlagen der Villa di Livia in Prima Porta	89

VIKTORIA BAUR, MIRIAM ETTI, MARIAN KEULER, JAN KRÄMER, ERIC LAUFER, JANINE LEHMANN, SALVATORE ORTISI & JENNIFER SCHAMPER Die Aachener Münstertherme <i>Zu den Ergebnissen der Altgrabungen 1910-1913</i>	97
ANNE HASELEY Die Südwestthermen von Olympia	103
GARY WHITE Das Badegebäude im Bonner Vicus	109
THOMAS LEPAON The Western baths of Gerasa of the Decapolis: original or standard building in the Near Eastern bathing context?	117
F. FATİH GÜLŞEN Tlos Large Bath and Bath Church	125
RAIMUND KASTLER & STEFAN TRAXLER unter Mitarbeit von Eva M. Feldinger & Martin Pietsch Römische Bäder in Nordwest-Noricum <i>Altgrabungen, neue Forschungen, typologische Aspekte</i>	131
DENNIS MURPHY A Bathhouse in Rural Lycia	147
 Infrastruktur der Wasserver- und Abwasserentsorgung	
TÜNDE KASZAB-OLSCHEWSKI Zur Frage der Wasserversorgung von Bädern ländlicher Hofstellen	153
F. MARTENS, J. RICHARD & M. WAELKENS The Roman Baths at Sagalassos (SW-Turkey) <i>A Preliminary Study of the Research Potential for a Reconstruction of its Water Management System</i>	159
E.J. OWENS Baths and Water Supply in the Cities of Pisidia: Antioch	171
GABRIELE SEITZ Konstruktionsmerkmale der Hangdrainagen zweier römischer Großbauten von Badenweiler, Kreis Breisgau-Hochschwarzwald	177
CRISTINA CORSI & FRANK VERMEULEN Water in <i>Ammaia</i> <i>Infrastructures and Leisures in a Roman Town of Lusitania</i>	183
 Bautechnik römischer Thermen	
KLAUS GREWE Die erste Getriebebedarstellung der Welt <i>Das Relief einer Steinsägemaschine aus Hierapolis in Phrygien</i>	191

H.P.M. KESSENER The mechanization of marble slab production	197
MICHAEL DODT Neue Ergebnisse zu den Trierer Barbarathermen	207
PETER I. SCHNEIDER Skulpturenausstattung und Wasserspiele in den Faustina-Thermen von Milet	217
SOPHIE ZU LÖWENSTEIN Das Stifterwesen in den Großen Südthermen von Timgad	225
FRERICH SCHÖN, JENS HEINRICHS, THOMAS SCHÄFER & ANDREAS GERDES DAMNUM NOCET, DAMNUM DOCET Werkstoffanalyse von antiken Zisternenverputzen	235
MICHAEL DODT Neue Ergebnisse zu den Zülpicher Thermen	241
Organisation/Funktion	
GONZALO MATILLA, JOSÉ A. MOLINA, ALEJANDRO EGEA & LAURA ARIAS Roman Baths in South-East <i>Hispania</i> : Historical, Architectonical, Religious and Social Aspects	253
STEFANIE HOSS From rejection to incorporation <i>The Roman bathing culture in Palestine</i>	259
HUBERTUS MANDERSCHIED Ein spätes Kaiserbad in Rom oder von der Genese eines Faktoids	265
SARAH JAPP Eine römische Badeanlage in der Stadtgrabung von Pergamon	275
MARTINO LA TORRE & MARTIN STESKAL Das Vediumgymnasium in Ephesos <i>Ein kaiserzeitlicher Bad-Gymnasium-Komplex</i>	283
INGE UYTTERHOEVEN Private bathing in the Imperial and Late Antique East <i>A Contribution to the Study of Ancient Bathing from a Privat Point of View</i>	289
GILBERT WIPLINGER Der Gebrauch des <i>xylospungi</i> <i>Eine neue Theorie zu den hygienischen Verhältnissen in römischen Latrinen</i>	295
Badekultur in nachrömischer Zeit	
SALEH LAMEI Egyptian Baths and Cultural tradition in the medieval Cairo	307

WERNER HEINZ Von der Antike zum Mittelalter: Balneologie im Wandel	313
TZVI SHACHAM Bathroom from the Crusader Period in Nazareth	319
THIBAUD FOURNET The ancient Baths of Southern Syria in their Near Eastern Context <i>Introduction to the Balnéorient project</i>	327
Präsentation/Denkmalschutz	
IRIS HOFMANN-KASTNER Römische Thermen und ihre heutige Präsentation	339
ALFRED SCHÄFER Die großen Kölner Thermen <i>Ausgrabung und Denkmalschutz</i>	343
MEINRAD N. FILGIS Die römischen Heilthermen von Badenweiler, Kreis Breisgau-Hochschwarzwald	351
HELMUT LULEY Sicherung und Präsentation römischer Thermenbefunde im Rheinland	357
NORBERT ZIELING Die öffentlichen Thermen der Colonia Ulpia Traiana - Xanten	361
Liste der Autoren	369

Water in *Ammaia* Infrastructures and leisure in a Roman town of Lusitania

Cristina Corsi & Frank Vermeulen

INTRODUCTION

The ruins of the Roman town of *Ammaia* are located in the heart of the Natural Park of the Serra de São Mamede, a mountainous area of east central Portugal extending into Spanish territory (fig. 1). The site is part of the fertile valley of São Salvador da Aramenha, where the rio Sever flows, in the municipality of Marvão, district of Portalegre. The Roman town is dominated by the spectacular isolated crest of Marvão, the stronghold funded by Ibn Maruán in the late 9th century, the same moment that the ancient settlement was definitively abandoned.¹ With the exception of a rural building of the 18th century, known as the Quinta do Deão that actually hosts the Monographic Museum of the Cidade Romana de *Ammaia*, the area where the Roman town rose is now deserted.

The exact identification of the Roman city was

already proposed in the mid Thirties of the 20th century,² and in 1949 the site was declared 'Monumento Nacional', but systematic archaeological research only started in 1994. In 1997 the Fundação Cidade de Ammaia initiated archaeological excavations and in 2001 opened the monographic on-site museum.³

In the early years, archaeological research had focused on the presence of existing ruins, consisting of ample portions of the main town gate *Porta Sul*,⁴ a few sectors of private housing east of the gate in the area of the museum,⁵ portions of the northeastern corner of the forum square where the podium of the temple is still standing above ground⁶ and finally part of a thermal complex in topographical connection with the forum.⁷ The archaeological evidence, integrated with historical sources, topographical survey, numismatic finds and aerial photography, allowed us to draft the first reconstruction of urban development and

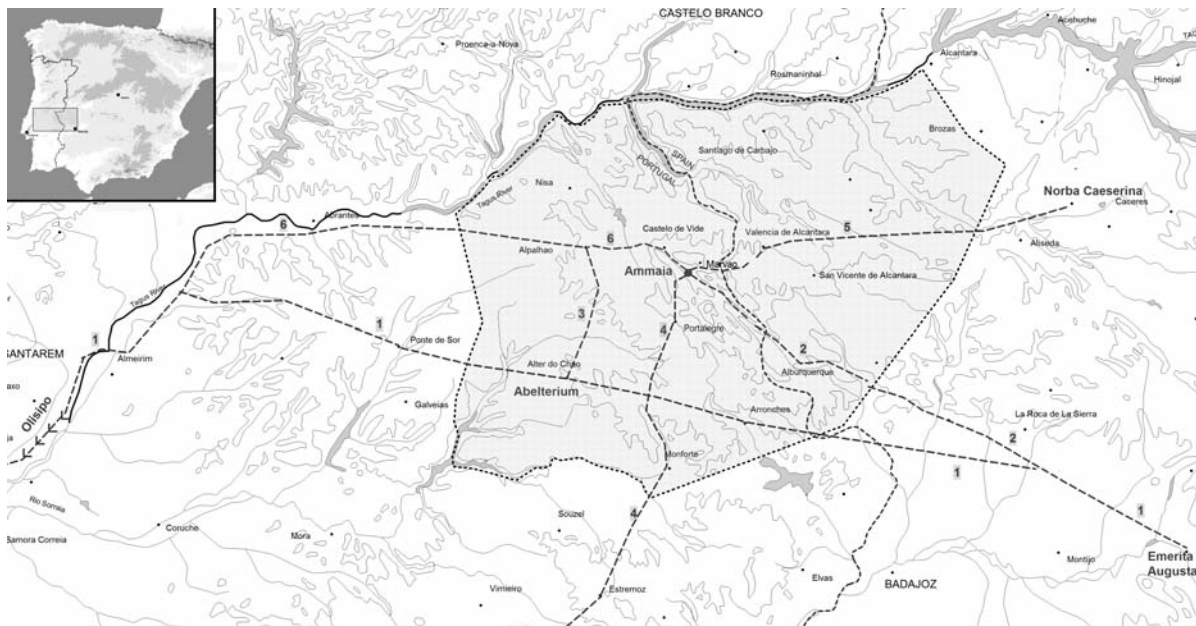


Fig. 1. Ammaia and its territory at the centre of the road-network in Lusitania (authors).

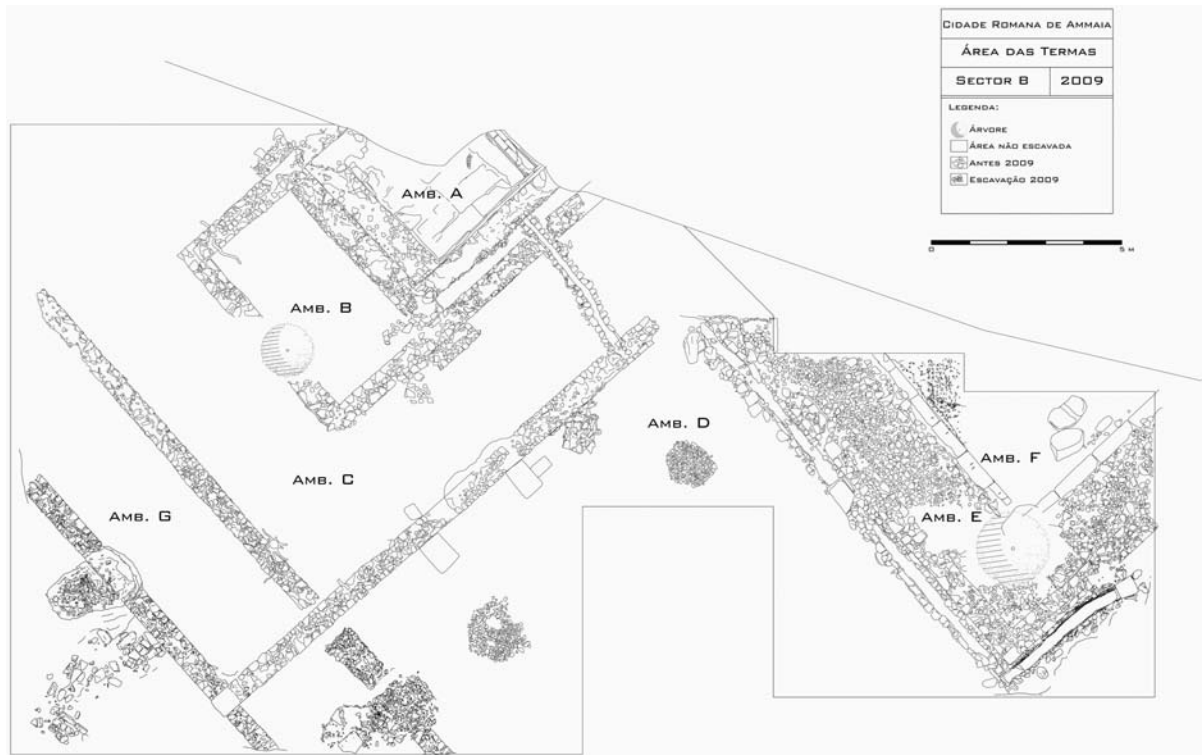


Fig. 2. Ammaia, *Termas do Forum*. General plan at the end of the campaign 2009 (authors).

to sketch the main characteristics of the urban layout.⁸ *Ammaia's* foundation should predate the inscription mentioning the *Civitas Ammaiensis* during the reign of Claudius (AD 44 or 45),⁹ and it was converted into a *municipium* maybe during the age of Vespasian, as is witnessed by another inscription from the times of Lucius Verus preserved in the Ermida do Espírito Santo in Portalegre (*CIL* II, 158 = *IRCP*, 616).

At this stage of research, no traces of settlement preceding the Roman foundation have been detected. Archaeological data collected until now prove that most of the development of the urban structures dates to the 1st century AD. The wealth of the town is probably mainly caused by the position it occupied at the centre of a vast communication network in *Lusitania* (especially along the road connecting the capital *Emerita Augusta* (Merida) with the Atlantic harbour *Olisipo-Lisboa*: (*It. Ant.*, 419,7-420,7) and to the exploitation of a wide range of natural resources (metals, building stone and rock crystal, pastoral and agricultural lands...). Most recent research proves that the urban surface of *Ammaia* was delimited by a circuit wall enclosing some 22 h, and the town had a regular layout, with main axes connecting the

gates and possibly a system of terraces regulating the most sloping part of the *intra-muros* area.¹⁰

THE WATER SUPPLY

Thus far we have been able to determine and partly study the two main sources for water collection and transport to the Roman town: the springs at 'Olhos de Agua' and a newly discovered aqueduct along a small western tributary of the Rio Sever. The best evidence comes from the so-called western aqueduct. To reach the upper parts of the city the Romans had to find and collect water from the hilly area west and southwest of *Ammaia*. This is an area of numerous and abundant springs with several small water courses connected to the valley floor of the river Sever. During fieldwork in the summer of 2004 we were able to locate the most important Roman point of capture on the southern flank of Malhadais hill. Along the left bank of this rivulet, a narrow gully was clearly cut into the steep rocky valley flanks. Further downstream the gully passes into a classical Roman type *specus*, found here by us *in situ*. A series of connected U-shaped monolithic blocks, with a length averaging around 1.5 m and an

internal gully, were set here in a neat rectilinear construction, just above the winter bed of the rivulet. This construction, now completely hidden by intense vegetation, was partly cleared and mapped over a distance of several dozens meters. Further fieldwork made clear that this aqueduct follows neatly the left bank of this tributary of the river Sever until it reaches the higher parts of *Ammaia*. Once inside the walled city area, probably after passing a not yet discovered *castellum aquae*, the aqueduct can be linked to a granite *specus* of exactly the same type, which was hazardedly found *in situ* west of the forum area some years ago.

Information from aerial photographs and results from the recent georadar survey allow us now to connect it to the area of the forum and its monumental bath-house. The study of a series of vertical aerial photographs spread over the second half of the 20th century and the beginning of the 21st, allowed us to further trace the route of this aqueduct. It probably follows the gentle slope of the hill inside the town area to a location near the southern side of the forum, where a *castellum aquae* might have been situated. From that location the aqueduct probably joined up with the central area of the forum and its adjoining bath-house. An intensive and high resolution survey with ground penetrating radar was done in the forum area during spring 2008.¹¹ It not only revealed a very exact plan of the town's monumental centre (with temple precinct, porticoes, shops, a basilica...), but also showed the presence of different structures connected with water provisioning and display. One of them, a linear structure diagonally crossing the central square of the forum, might well coincide with a branch of the main aqueduct. It probably provided water to one or more monumental basins located near the forum temple.

THE THERMAL COMPLEX

The excavations at the thermal complex, situated immediately south of the forum were started in 1996, along with several other irregularly spaced campaigns until 2003, while a new program of stratigraphical investigations started in the summer of 2008. Excavation campaigns have continued in the following summer season in order to thoroughly investigate this important urban building.

What had been brought to light since 2003 were parts of a vast complex, containing one room which was clearly identified as a bath facility (*ambiente A*, fig. 2), probably heated, and the cor-

ner of a well built *natatio* (*ambiente F*, fig. 2). In between them, there seems to occur a large space whose floor was probably originally laid on *suspensurae* (fig. 3), which however have been devastated by spoliation activities. Even considering the fact that only a very small portion of the original floor above the hypocaust is preserved, it seems that it was cut in a later phase by a stone built sewer, whose western side was constructed with some reused materials (e.g. column drums), while the more original eastern side was linked to the foundation of the massive wall delimiting the *natatio*.

The bath (*ambiente A*), plastered with marble slabs laid on thick layers of pinkish mortar, was made accessible by a short flight of 3 steps, and went through several structural transformations, meant to reduce the capacity. A lead *fistula* conducted water out to a channel covered with schist slabs.

The structures of this bath are implanted partially reusing existing walls, with the same orientation. The excavations inside the area surrounding the bath (*ambiente C*) did not reveal any remains of flooring levels and archaeological finds are very poor, so it is difficult now to determine its primary use. The *natatio* (or *piscina*) has been built with big, well squared blocks of granite, inserted into the huge *caementicium* nucleus that delimits the two walls. The interior of the pool has been plastered with carefully smoothed mortar, and was probably originally covered with marble slabs.

In order to better comprehend the planning of the complex, to have a careful understanding of the kind and disposition of the thermal rooms, to investigate their connection with pre-existing building structures and to collect more data about the chronology of these processes, we decided with the 2008 and 2009 excavation campaigns to better connect the quadrants, to finalise research on these existing sectors of the excavation and to enlarge in a now more open excavation area to the south-west of *ambiente B* and *ambiente C*. Furthermore, a major effort was realised to understand the full topography of the site. This implied a campaign of topographic and geophysical survey of the whole area of the bathhouse. This work was greatly hindered by the fact that part of the site was destroyed during the 1920's when the road from Marvão to Portalegre was constructed, cutting through what now seems to be part of the location of this monumental bathhouse. However, by careful analysis and positioning of several still standing or detectable wall structures on the edge of the street and by linking them up with the



Fig. 3. Details of *suspensurae* made of small pilasters of *bessales* (Ammaia, *Térmas do Forum*, ambiente D) (photo authors).

results of detailed GPR and magnetic surveys¹² of the remaining agricultural space in this area of *Ammaia* along with the still preliminary results of the new digs, we are now able to obtain much better understanding of this monumental complex. The new excavations clearly confirmed that the bathhouse was not the first building in this part of the city. It was preceded by a possible rectangular building structure with portico (?), whose function is still unclear, but which cannot at the moment be connected with a thermal use. According to wider geophysics results pertaining to the original *insula* south of the forum, and to the dating of the very few finds connected with this first occupation phase, it might be part of pre-Flavian town structures, possibly with residential function (*domus*?). Some destroyed flooring in *opus spicatum* is possibly associated with this phase.

According to the preliminary analysis of associated pottery, somewhere in later Flavian times or the early 2nd century a bathhouse was constructed here. Taking all data into consideration this was probably a rectangular structure of min. 40 by 40 m. Several wall structures of this bath-

house are now excavated, while geophysics and observations above ground allowed us to understand the position of several other walls. Important is the discovery of parts of the outer wall of the bathhouse. An excavated section of this outer wall, bordering the baths on their southern side, consists of well constructed masonry (0.80 m thick) with irregular blocks of quartzite and granite, partly levelled with a layer of local schist. It connects to a similar wall which seems to divide the bathhouse in two parts and which partly reuses structures of the older phase and partly interconnects with new and very solid construction elements of large quadrangular blocks of granite. Additional information about the *natatio* was also obtained. There seems to have been a major pool element constructed in the bathhouse, measuring some 15 by 12 m and with an original depth close to 1.70 m.

Awaiting further information from new excavations, it is still too early to understand the full plan of this bath complex, whose occupation (into the 3rd century?) remains also to be dated with precision. The ongoing study of many finds found

in the sewer near the *natatio*, which was further excavated and mapped in 2008-2009, will surely help in determining the final use of this bath complex and hence maybe of the main elements of the city's water distribution system.

NOTES

- ¹ Sidarus 1991, 13-26.
- ² Vasconcelos/Leite 1935, 5-9.
- ³ The Fundação produced some annual reports submitted to what is nowadays called IGESPAR (Instituto de Gestão do Património Arquitectónico e Archeológico).
- ⁴ The arch of the gate, known as 'Arco da Aramenha', was still preserved *in situ* until 1710, when it was dismantled and rebuilt in Castelo de Vide. There it was definitely destroyed at the beginning of the 20th century. There is only one picture remaining: Mantas 2000, pp. 413-414, fig. 4, p. 419. The very few pieces that are still preserved orient the datation to Augustan age, with major monumentalisation in Flavian times.
- ⁵ Preliminary news are in Oliveira et al., 1996.
- ⁶ Mantas 2000, 410-413.
- ⁷ Oliveira et al. 1996; Pereira et al. 2000; Borges 2003.
- ⁸ A synthesis of historical research is in Guerra 1996, and mainly: Mantas 2000, 391-394.
- ⁹ D'Encarnação 1984, 615; Mantas 2000, 392-393.
- ¹⁰ Corsi et al. 2005; Corsi/Vermeulen 2006, 182-186.
- ¹¹ This GPR survey was done by a team from Ghent University and processing of the data managed by Lieven Verdonck.
- ¹² The magnetometer survey campaign of 2009, which produced a fine map of regular town structures covering an area of almost 5 hectare, was done in collaboration with the University of Southampton (APSS-team).

BIBLIOGRAPHY

- Borges, S. 2003, A cidade romana de *Ammaia*: as termas do forum (notícia preliminar), *Ibn Maruan* 12, 85-97.
- Corsi, C./M. De Dappe/S. Deprez/F. Vermeulen 2005, *Geoarchaeological Observations on the Roman Town of Ammaia (Alentejo, Portugal)* (Internet Archaeology 19).
- Corsi, C./F. Vermeulen 2006, Elementi per la ricostruzione del paesaggio urbano e suburbano della città romana di Ammaia in Lusitania, *Archeologia Aerea* III, 177-194.
- Corsi, C./F. Vermeulen 2009, Archaeology of a Roman landscape in Central Portugal, *Egyptian Journal of Environmental Change* 1, 1-5.
- D'Encarnação, J. (ed.) 1984, *Inscrições Romanas do Conventus Pacensis*, Coimbra.
- Guerra, A. 1995, *Plínio-o-Velho e a Lusitânia*. Lisboa.
- Mantas, V.G. 2000, A sociedade luso-romana do município de *Ammaia*, *Sociedad y Cultura en Lusitania Romana*, IV *Mesa Redonda Internacional*, Mérida, 391-420.
- Oliveira de, J./A. Bairihas/C. Balesteros 1996, Cidade de Ammaia – Marvão, Relatório dos Trabalhos arqueológicos desenvolvidos em 1995, *Ibn Maruan* 6, 43-61.
- Pereira, S./J. Carvalho/S. Borges 2000, Numismática Ammaense, *Notas Preliminares*, *Ibn Maruan* 9/10, 55-70.
- Sidarus, A. 1991, *Ammaia* de Ibn Maruán: Marvão, *Ibn Maruán* 1, 13-26.
- Vasconcelos, J./J. de Leite 1935, Localização da Cidade de Ammaia, *Ethnos* I, 5-9.