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Fieldwork at Novae (Bulgaria) in 2009 and 2010
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Novae was a Roman legionary fortress and town, located in modern day Bulgaria, to the east of Svishtov on the banks of the Danube. The site has been continually excavated since 1960 by a joint Polish-Bulgarian team and the results have been published thoroughly. Today, there are three Polish teams excavating at Novae, one of which is from the Antiquity of Southeastern Europe Research Centre. The Centre carries out fieldwork within Sector IV, mostly renowned for its military hospital (valetudinarium). Novae was the home and the headquarters for the 1st Italic legion (Legio I Italica) in the province of Moesia Inferior for nearly its entire period of occupation as an important Roman military base (as a military castra), but still underwent a number of significant changes through the years. With the valetudinarium having been completely excavated by 2006, the Centre has since then worked on establishing the layout of the earlier structure below – the baths of the castra legionis. They functioned here approximately in 70–101 AD, until Trajan’s Dacian wars required a large military hospital to be built and the thermae were moved towards the centre of the fortress, west of the principia. The location of the first thermae in the praetentura in the scannum closest to the northern wall of the fortress (and hence the Danube) is somewhat peculiar but can be explained by logistical reasons. Heavy building material for the baths (in a time when most parts of the castra, excluding the principia, were made of wood) was predominantly transported on the Danube. Thus, the stones could be directly heaved onto the construction site. Additionally, huge amounts of sewage could easily be disposed of on the river bank. The thermae were explored by trial trenches; 2009 and 2010 were scheduled to be the final seasons.

2009 (3.08–4.09)

Altogether, a surface of c. 250 m² was uncovered in 2009 by trenching. The structural remains of the baths occur usually 2 m underneath the level of the valetudinarium but in some cases a depth of more than 8 m below the surface was reached. The main issues for this campaign were: the layout of the caldaria; to locate the wall between the caldaria and the tepidarium; to find the praefurnia of both installations and the entrance to the basilica thermarum itself; to define the nature of a structure with an opus spicatum floor first noticed in 2008 and the extent of the southern part of the thermae with its boundary wall and the palestra; lastly, to gain more information regarding the two chronological phases of the baths, which as we knew from previous fieldwork suffered destruction from fire after an earthquake and were subsequently remodelled.


Under the direction of Prof. Piotr Dyczek.

A stratigraphic analysis in the caldarium revealed that the baths possessed – apart from the tepidarium – three heated rooms with apses, one of those built along an east-west axis, and the other two with a north-south orientation. At least one of those rooms served as a caldarium. In one of the basins remains of hydraulic lime mortar were found, while the bottom layer of opus caementicium revealed imprints of wooden beams used during its construction. While investigating the partition wall between the caldaria and the tepidarium, a heating system found in 2008 was further uncovered. The hypocaust was built with pilae of stacked up bessales measuring 23×23 cm or 28×28 cm. A crack in its western wall is a further proof for the earthquake which partially destroyed the thermae.

The entrance to the basilica thermarum was located on the eastern side of the building and approached from the via praetoria. The entrance was flanked by two short walls and provided with a high threshold to avoid flooding by rainwater. The adjacent room was adorned with wall painting. The construction with an opus spicatum floor (Fig. 1) first discovered in 2008 was identified to be a basin measuring 16×9 m. The floor consisted of small bricks laid on hydraulic mortar. Traces of calcite suggest that the floor was exposed to water over a long time. On the southern side, a wall limiting the floor was found, along with an aqueduct. One of the clay tubes bore a planta pedis stamp, stating the producer’s name ARRIVS (Fig. 2). Obviously, the opus spicatum was the adorned floor of a natatio basin lying in the northern part of the palestra.

The southern boundary wall of the baths was found to be located merely half a meter north of the exterior wall of the later valetudinarium. Its foundations had a width of 120 cm, and the wall itself measured 90 cm. The shift in placement resulted from technical requirements during the construction of the valetudinarium, where a number of small rooms was built, taking up additional space towards the south. It would have been difficult to merge the partition walls with the existing exterior boundary wall and too dangerous to just lean them against it.

Analysing the architecture, the changes undertaken after the earthquake become visible. The hypocaust of the tepidarium was remodelled, resulting in a partial deconstruction of the entire system. The tile floor in the basilica thermarum was repaired, the layout of the caldaria was shaped anew, a number of praefurnia was closed, and the course of some sewage channels changed. During the excavations a number of significant finds was unearthed, among them a series of early 1st c. coins (Augustus, Tiberius, Claudius), retrieved from the destruction layer after the earthquake, pottery including terra sigillata and glass vessels from the thermae. From the hospital level, an interestingly shaped clay altar (Fig. 3) and a bone sheath pommel are noteworthy.

2010 (2.08–9.09)

During the closing campaign, the eastern, the northern and the western wings of the baths were in the centre of attention. Also, attempts were made to distinguish the two phases of the building and to understand architectural details. In 2010, practical possibilities for investigating the thermae via probing trenches were exhausted. A number of walls of the valetudinarium stand on the earlier walls belonging to the baths and the general completeness of the hospital structures renders large parts below it inaccessible.

The baths required an entire scannum within the praetentura of the fortress. It was built by soldiers of the 1st Italic legion, whose brick stamps occur on many structural elements made of clay. There is a further proof that the thermae were damaged by an earthquake. More traces of the tectonic rupture, which ran through the hypocaust systems and the basin in the frigidarium were discovered. As a consequence of the catastrophe, the hypocaust ovens burst and the baths were partially burned down. The reconstruction was apparently done hastily, employing all sorts of substitute materials, such as clay tube sherds or bessales of varying size to serve as pilae. The mortar used for the new floor in the hypocaust cellars was of inferior quality and the wall paintings were repaired with little care.

The overall plan of the Flavian baths at Novae (Fig. 4) differs in some ways from other baths known within the provinces, including the succeeding thermae built at Novae west of the principia, after their original location had been taken over by the valetudinarium. The Flavian baths were large (claiming a surface of almost one hectare). Their layout resembles elaborate civil bathhouses rather than modest and practical military installations and shows influences of Italic civilian architecture. The baths were uncommonly richly decorated with stucco and wall paintings; some door frames and wall adornments were made of white and polychromatic marble.

Each wing in the building had a distinct function. The southern part was occupied by the palestra surrounded on three sides by a portico, whose walls were painted with geometric and floral ornaments. On its northern side was the aforementioned natatio basin with its opus spicatum floor. The eastern part, running along the via praetoria, held a number of small rooms, probably for storage. A taberna was also located here. The northern wing was the most sophisticated, as it held the actual baths. The far east served as an apodyterium and basilica thermarum. This was also where the main entrance from the via praetoria was located. The roof was held by a number of stone pillars, while the walls of the basilica were also decorated with stucco.

From here, the sudatorium to the south or the frigidarium with two cold water basins could be reached. Interestingly, constructional details became visible: the remains of wooden formwork where once the opus caementicium was filled in. The structure of the wood is well visible, and the planks had a width of 10–15 cm. The western wall of the frigidarium had niches for labra. The floor was made of interlaced terra cotta tiles and opus spicatum, and along the walls ran a stripe of white mosaic. The adjoining room was a tepidarium, which could also be accessed directly from the palestra.

Interesting features were discovered within the caldarium of the baths. Here, three basins for hot water were located: two in apses facing west and heated by a common, big praefurnium and a rectangular one, heated separately. To acquire a maximally large heated space, the architects had devised a single room with a surface of more than 400 m². Such measurements required the use of structural pillars for the roof – not an easy task considering the suspended floor of the caldarium. Therefore, square brick pedestals (0,9×0,9 m) were erected on stone foundations among the suspensurae (Fig. 5). On them, pillars (probably made of bricks) were set. The reconstructed diameter of these pillars measured slightly above 30 cm, just as the columns in the palestra. The suspensurae were made solidly of standardised bessales. The height of the cellar was c. 1 m. Within the walls of the tepidarium and caldarium, various tubulatio heating systems were used.

In the western wing there seem to have been reception rooms, as deduced from finds of luxury glass vessels, terrasigillata, and fine lamps.

A number of clay pipe aqueducts ran up to the thermae. One filled the natatio, others the basins of the frigidarium and caldarium. The enormous amount of water required by the thermae was disposed of by a complex sewage network (Fig. 6). A total of six channels were found, made of stone and mortar. The sewers ran below the western part of the building, as a result of the general layout as well as terrain properties. After the earthquake, the channels were not fixed, but instead equipped with bypasses to avoid the leaking parts.

During the 2010 campaign, traces of a brief presence of the 8th Augustan legion during the 1st c. AD were found. Below the western wing, a series of wide but shallow pits filled with pottery sherds and charcoal were unearthed. Also a rare stone construction of this period was found (albeit dismantled) – probably a cistern or a basin, with a bottom laid out with small tiles and mortar.

Among more interesting finds of the campaign there are a number of volute lamps, various small elements of loricatae armour, a cheek plate from an iron helm (Fig. 7), as well as terrasigillata, and glass vessels.

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W czasie omawianych kampanii odkryto wiele ciekawych zabytków ruchomych, w tym zachowane w całości lampy wolutowe, ołtarzyk gliniany (Ryc. 3), elementy brązowe lorica segmentata, napolicznik hełmu (Ryc. 7), a także naczynia terra sigillata i szklane.
Fig. 1. Novae 2009. Basin with *opus spicatum* floor (Photo J. Reclaw).


Fig. 2. Novae 2009. Potter’s stamp *in planta pedis* on a terra cotta water pipe (Photo M. Bogacki).


Fig. 3. Novae 2009. Clay altar (Photo J. Reclaw).

Fig. 4. Flavian baths, overall plan (by T. Słowik).
Ryc. 4. Łaźnie flawijskie, plan ogólny.

Fig. 7. Novae 2010. Iron helm cheek plate (Photo J. Reclaw).
Fig. 5. Novae 2010. Hypocaust with a structural pedestal (Photo J. Reclaw).

Fig. 6. Novae 2010. Sewage channels (Photo J. Reclaw).