ROMAN *THERMAE* IN ISTRIA

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The paper deals with the Roman public *thermae* in the cities of Pula and Nesactium, and the private *thermae* of the residential villas in Medulin, Verige Bay on Veliki Brijun Island, in Valbandon, Barbariga, and Sorna in Katoro, as well as the production complex in Červar Porat. Thermal complexes in Istria have not been sufficiently investigated, except in Nesactium and Verige Bay.

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Roman *thermae* or baths are an unavoidable essence of the urbanistic and project tasks of the Roman architects as early as the 2nd century BC. As a building complex in terms of architecture, as well as a cult of water use and body care, the *thermae* have evolved from the Greek palaestra. Therefore, in terms of architecture, thermal complex was first developed in Campania, under strong influence of Greek culture and tradition at the time of the late Roman Republic. The functional construction and perfecting of the hypocaust, which is in the antique tradition ascribed to Campanian merchant Sergius Orata, brought to a sudden development of thermal complexes, which, initially baths for athletes, acquired a significant hygienic and health-care role in the public, political, and cultural life of the Roman society[1].

A well organized and implemented water supply infrastructure, executed either by small aqueducts, arrangement of springs or building of public and private water reservoirs filled with spring water or rainwater[2], influenced the building of public and private *thermae* in the urban centers of Istria (Pula, Nesactium), as well as more modest bathing units in the residential areas of villas *rusticae* or more luxurious thermal complexes in municipal and residential villas. It is known that admission fee was paid in private municipal baths, while the usage of public *thermae* was generally free of charge, because it was subsidized by emperors or other important officials[3]. Given that Roman bathing and thermal facilities in Istria have not been appropriately analyzed and systematized so far, this paper aims to provide an overview of discovered buildings with thermal characteristics.

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1 P. GRIMAL, Roman Civilisation, Belgrade 1968, 291–293.

2 See: A.GNIRS, *Römische Wasserversorgungsanlagen im südlichen Istrien,* Jahresbericht k.u.k. Marine-Unterrealschule in Pola, Pola 1901, 1–29; Camillo de FRANCESCHI, *Il Ninfeo e l'Acquedoto di Pola,* Atti e memorie della Società istriana di Archeologia e Storia Patria, 46–47, Pola 1934, 227–251; V.GIRARDI JURKIĆ, *The Water Sources and Water Supply of the Antique Pula* in this volume of "Histria Antiqua" review.

3 P.GRIMAL, *op.cit.*, 293.

1. In the city of Pula, the building remains of *thermae* were observed about a hundred meters behind the rear of the church of St. Thomas (today cathedral complex), during the protective investigation carried out in relation to the installing of new gas pipes in 1973. Rectangular and round suspending posts of a larger thermal complex were found in a trench (the intersection of Kandler Street and „Naša Sloga" passage) [4]. The suspending posts were 40 cm in diameter, 60–64 cm of height, placed at regular intervals next to one another or behind the other (55 cm). Although the investigation has not been extended, the very insight into the size of the suspending posts built of curved modules made of well baked bricks gives strong enough indication that it was a larger thermal complex of the Roman public baths in this urban space along the main road (*decumanus*) near Jupiter's Gate (*Porta Iovis*) leading out of town towards the amphitheater and Roman Nympheum. According to the method of construction, and judging by the material collected in the fill (fragments of pottery, bone artefacts, one-piece and two-piece combs), it was most likely a spacious larger building which was in operation in mid–2nd century.

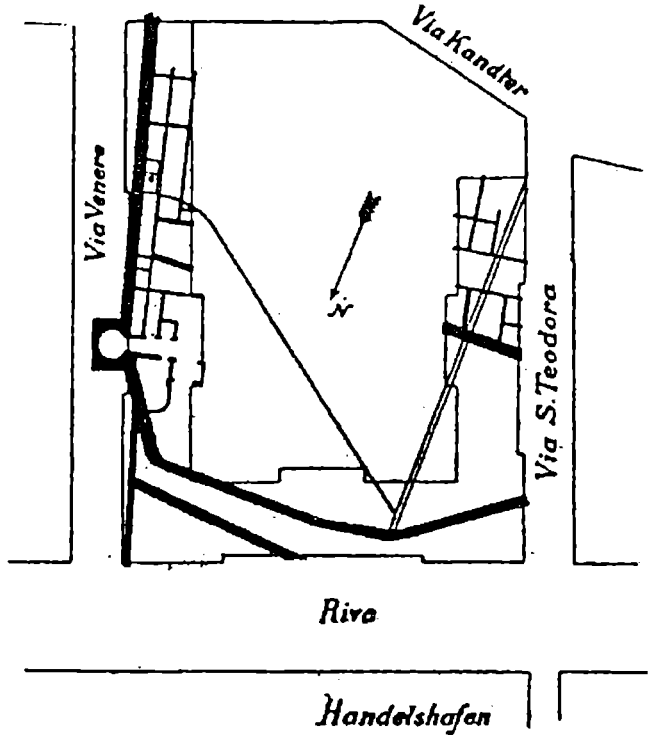

FIGURE 1

A part of a smaller thermal complex[5] is presumed to be located in the area of the Franciscan monastery in Pula, immediately westwards under the defensive wall of the prehistoric hillfort situated on the central city hill, where excavations uncovered a Roman room with a mosaic floor decorated with a kantharos vase, a swastika and a hippocampus. This conclusion is drawn on the basis of the known fact that the motives of hippocampus and kantharos commonly occur in the decoration of Roman bathing areas[6].

[4] The protective archaeological investigation was carried out by V. Girardi Jurkić, and the data have not been published so far, although the geodesic survey of the finds was performed. There are data showing that A. Gnirs (A. GNIRS, Zur *Topographie des antiken Pola,* Jahrbuch der k.k. Zentral Kommission für Kunst und Historische Denkmale, 2, Wien 1904, 216–220) carried out investigation in that area.

[5] V.GIRARDI JURKIĆ, *I mosaici antichi dell'Istria,* III Colloquio internazionale sul mosaico antico, Ravenna 1984, 170–171.

[6] D.LEVI, *Mosaico,* u: Mosaico e mosaicisti nell'antichità, Enciclopedia Italiana, Roma 1967, 14.

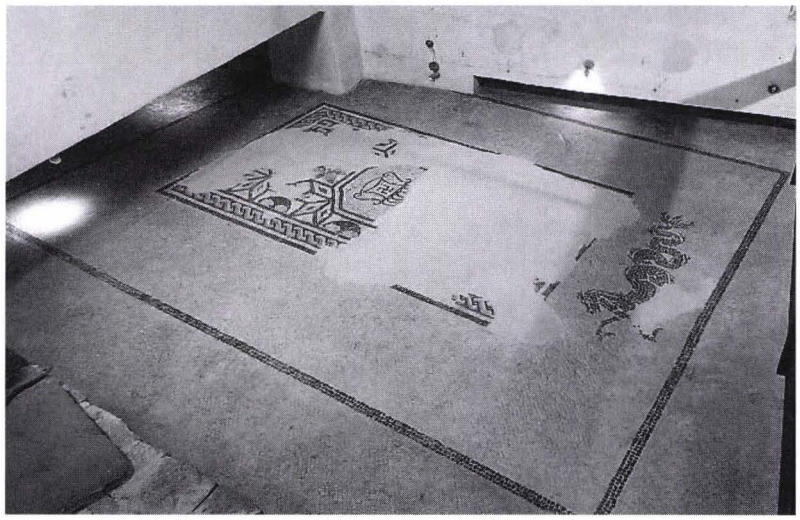

Fig. 2a

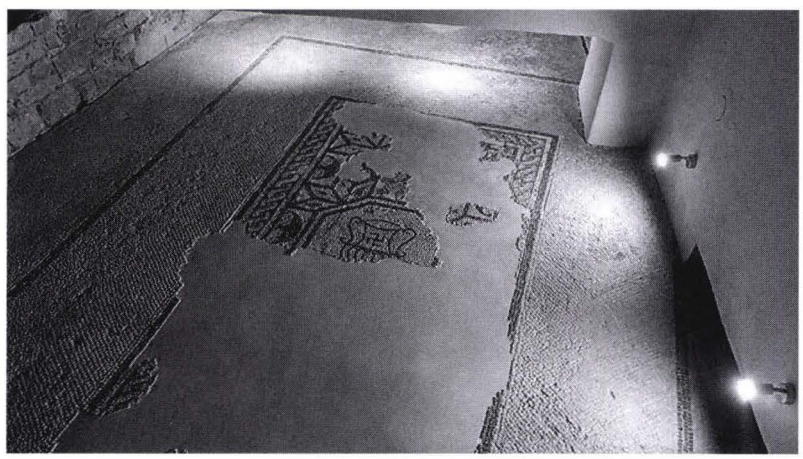

Fig. 2b

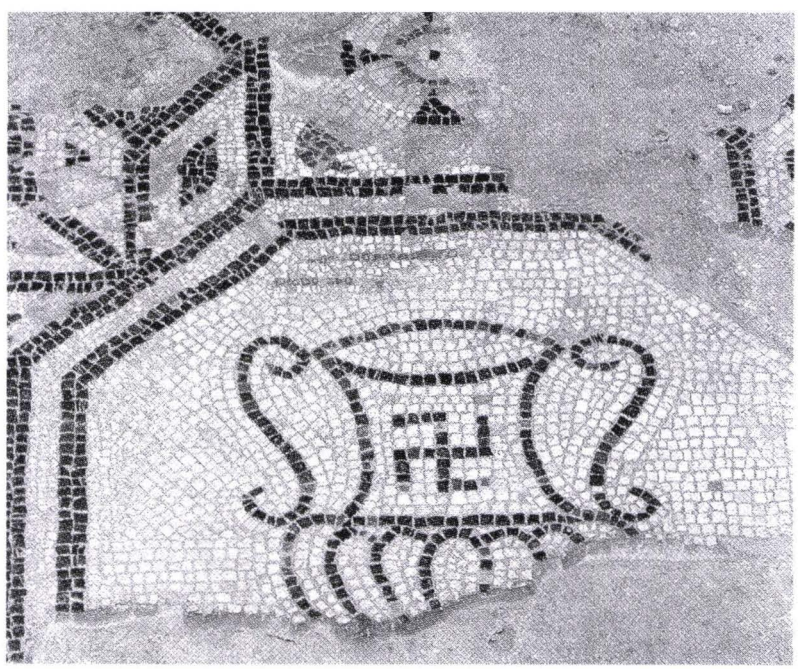

Fig. 2c

FIGURE 2

Similar examples have been found in Pompeii[7] and Ostia. It can be thus deduced that several hundred years later a cult place of the Christian community was created in the area of the Roman city villa with a built bathing area. This cult place had been used for worship for centuries, so that the monastery and religious complex of St. Francis was built at that spot in the 15th century. Unfortunately, no major archaeological investigative works have been performed in this area to this very day, which would certainly yield significant results in determining the value of the site in the urban city center.

The Roman urban villas below the city's central hill also contain remains of luxuriously executed and decorated home baths, supplied with water via pipes from the city water reservoirs located on the central city hill[8].

2. A complex of two Roman thermal facilities, a large and a small one, was unearthed in Nesactium in the early 20th century. During the operation the researchers identified those two facilities as male and female *thermae* respectively.

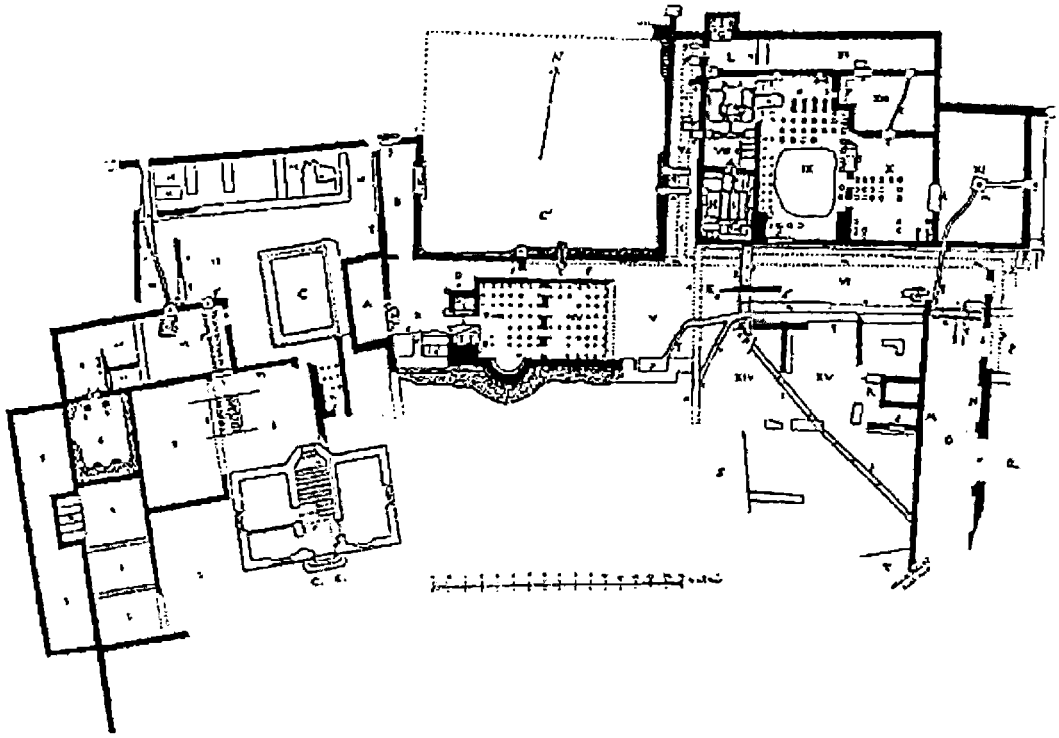

FIGURE 3

In recent years, there is an opinion that this is a unique thermal complex linked to a large and spacious water reservoir[9].

The *thermae* in Nesactium are located north of the forum (at a distance of about 30 m), and are considered to be among the most important buildings of this Roman city, while a thermal

[7] A.de FRANCISCIS, *Pompei, Terme di Foro*, Novara 1969.

[8] G.FISCHER, *Das römische Pola*, München 1996, 47–49; V.GIRARDI JURKIĆ, *The Water Sources and Water Supply of the Antique Pula* in this volume of "Histria Antiqua" review.

[9] G.ROSADA, *Oppidum Nesactium*, Treviso 1999, 46–55.

complex of such dimensions has not been credibly established at the time of previous excavations in Pula. Alberto Puschi, who was the most responsible for the excavation and interpretation of the Nesactium *thermae*[10], found two connected parts of the *thermae*, the smaller one on the west side and the other one east of the forum. According to the researcher, the larger part of the building were *thermae* for men, while a smaller part of it were for women, while Guido Rosada[11] believes that this is a unique thermal structure.

Despite this divergence of opinion in the determination of the basic functions of discovered structures, the Nesactium complex is certainly the most thoroughly investigated thermal complex in Istria so far. The so-called men's quarters of the *thermae* represents a discernible joint complex consisting of a typical rectangular four-sided thermal building. South of a large water reservoir a small square block of so-called women's *thermae* is situated. Between the two (V and E), there are rooms whose floors were covered with mosaic. Of the large *thermae*, only the caldarium (IX), tepidarium (X) and frigidarium (XI) are preserved. To the north and south, the remains are bordered by the corridors (XII) whose floors were paved in *opus signinum* and white mosaic (VI).

In late antiquity, the praefurnium was turned into the production area of the economic complex, and it contained olive presses. The layout of the women's *thermae* has been preserved entirely, and it is readable up to the present day. It consists of a magazine for the timber (A), a praefurnium (D), a furnace (b, j, m) and a caldarium (IV). Leaving aside for now the analysis of the remodeling phases and pertinent details[12] (which was done by Arslan and Rosada), it can be considered that thermal facilities in Istria and Nesactium maintain classical form and function. Therefore, an ideal layout of a typical Roman *thermae* would result after a final cleaning and defining of the original state and function, and after the creation of a conceptual architectural base and executed conservation works with a partial restoration.

In the context of men's *thermae*, Rosada also finds a latrine, which is the only novelty to be adopted as the logical sequence of the components of a utilitarian thermal space. The layout of the base structure also shows a dense network of water channels and pipes that brought water from the two large capacity water reservoirs to the bathing place, and there is also a developed drainage system. In any case, the water supply problems and the heating of large quantities of water and rooms in the Nesactium *thermae* was solved very skillfully and with maximum efficiency.

3. From 1909 to 1912, the remains of a Roman residential villa, which consisted of two construction units[13], were excavated on the banks of the shallow Bay of Valbandon near Fažana. The northern part of the building is only partialy preserved. The remains of two large semi-circular rooms, 12 meters in diameter, were discovered along the very waterside. The rooms open to the sea, and were paved with a black mosaic framed in white stripes. The whole mosaic carpet was further decorated with multicolored marble, aragonite, and alabaster[14]. A. Gnirs calls these rooms exedrae, but does not assign any specific function to them. Since the building was not completely explored and its function was not defined, it is likely that this part of the building was part of a thermal complex (C).

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[10] A.PUSCHI, *Edifici antichi scoperti a Nesazio, scavi degli anni 1904 e 1905*, Atti e memorie della Società istriana di Archeologie e Storia Patria (further: AMSI), 21, Parenzo 1905, 265–297; the same, *Nesazio, scavi degli anni 1906, 1907 e 1908*, AMSI, 30, Parenzo 1914, 1–75.

[11] G.ROSADA, *op.cit.*, 46–55.

[12] G.ROSADA, *op.cit.*, 50, note 72.

[13] A.GNIRS, *Forschungen in Istrien: I. Grabungen im Gebiet der Antiken Herrschaftsvilla von Val Bandon ...*, Jahreshefte des österreichischen archäologischen Instituts (dalje JÖAI, 14, Wien 1911, 155–196.

[14] See: R. MATIJAŠIĆ, The Economy of Antique Istria, Pula 1998, 121–124.

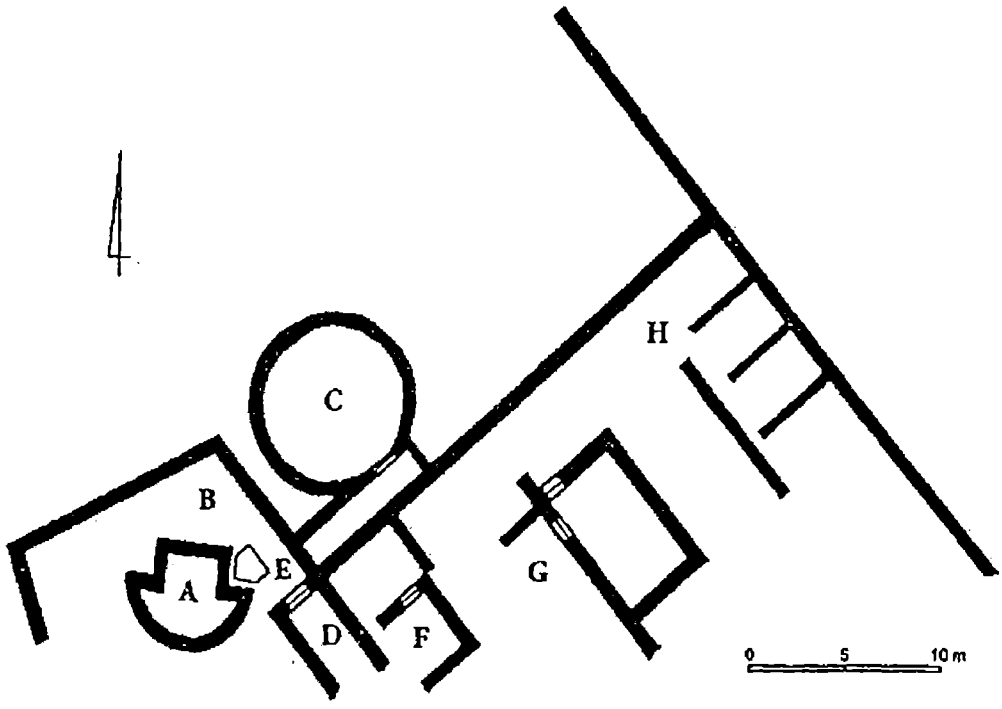

FIGURE 4

4. Several kilometers further to the north along the coast, on Barbariga Cape near Peroj, there are the remains of a large representative villa researched by Hans Schwalb in 1902[15]. The main core of the building consisted of a peristyle courtyard opened toward the sea and surrounded by rooms on all three sides. North of the peristyle, in the sea, a well preserved water reservoir can be observed. The part of the building with a peristyle Schwalb called the summer residence, while the north wing along the sea he called the winter residence. The southeast corner of the peristyle part is linked to a smaller thermal complex (M) and, further, to the two ends of a large promenade (L) that in the south ends with a dock. A large tank (*castellum aque*) (Z) [16] was discovered in the shallow sea, on the western side of the complex.

5. The lavish Roman residential complex in Verige Bay on Veliki Brijun Island, which was excavated in the period from 1901 to 1914 by A. Gnirs[17], among other also contained a spacious *thermae* (C) with conventional areas: fireroom, dressing room (*apodyterium*), a swimming pool with hot water and steam spaces (*caldarium*), swimming pools with cold water (*frigidarium*), tepid rooms where the body was getting used to a higher temperature (*tepidarium*), and the entire water heating and steaming system. The semi-circular façade of the building articulated by pillars was opened to the sea with a bathing area and pools for vivariums (B). The areas for accomodation and rest (D) were observed belonging to the complex, as wella as a promenade, while a palestra for exercise and games[18] stretched toward the library and a large portico.

[15] H.SCHWALB, *Römische Villa bei Pola*, Schriften der Balkankommission, 2, 1902, 1–52.

[16] A.GNIRS, *Römische Wasserverdorgungsanlagen im südlichen Istrien*, Jahresbericht der j.u.k. Marine-Unterrealschule in Pola, Pola 1901, 1–29; Š.MLAKAR, *Architectural and Compositional Features of Roman Villas Rustica and Mansions in Istria*, Jadranski zbornik, 15–16, Pula-Rijeka 1995, 37–39; R.MATIJAŠIĆ, *op.cit.*, 124–125.

[17] A.GNIRS, *Forschungen in Istrien, I. Grabungen in Val Catena auf Brioni grande ...*, JÖAI, 10, Wien 1907, 43–47; isti, *Forschungen über antiken Villenbau in Südistrien, I. Die Grabungen in der antiken Villenanlage von Val Vatena ...*, JÖAI, 18, Wien 1915, 99–102.

[18] M.SUIĆ, *Antique City on the Adriatic*, Zagreb 1976, 216; R.MATIJAŠIĆ, *op.cit.*, 115–117; Š.MLAKAR, *op.cit.*, 33–36.

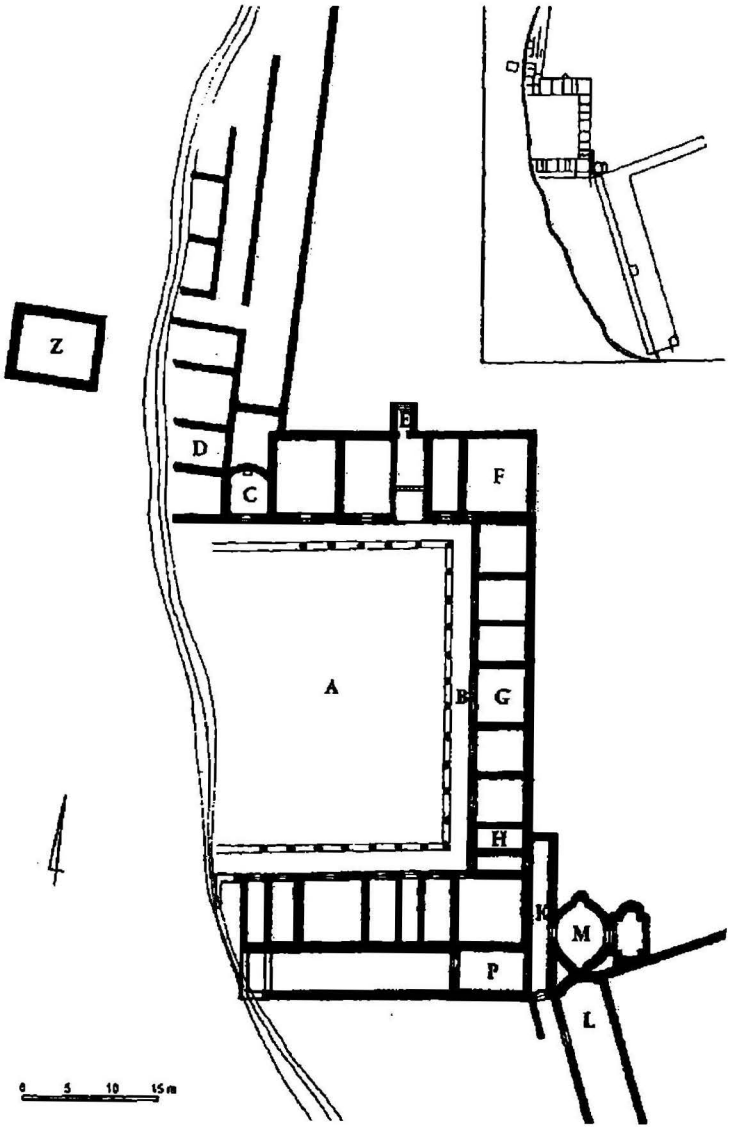

FIGURE 5

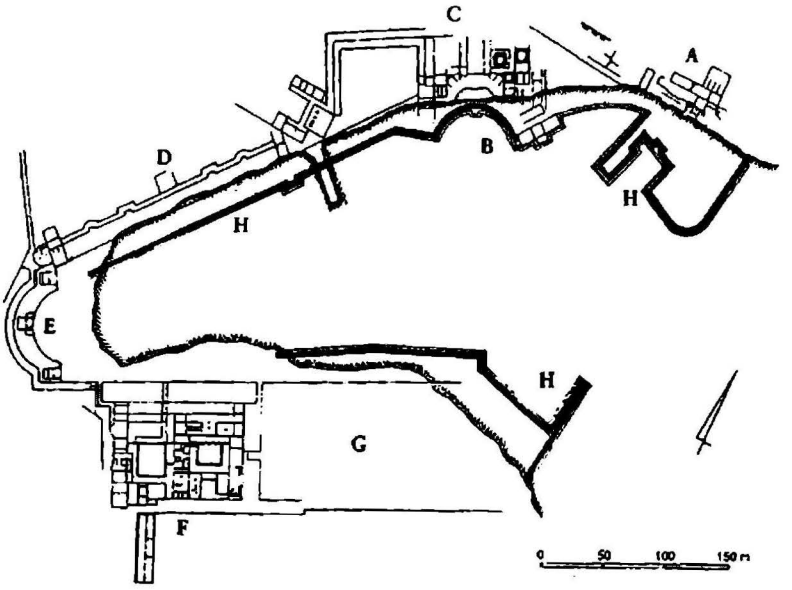

FIGURE 6

6. The two-year archaeological investigation conducted in 1966 and 1967 on Sorna Peninsula south of Poreč determined the existence of the remains of a large Roman villa, whose building complex cut through the entire width of the peninsula from the south to the north coast[19]. Near the southeast corner of the mansion, along the very coast, there was a *castellum aquae*, which received fresh water via a pipeline from nearby Funtana. Right next to the water supply terminal, an area retained by a wall held the mansion's thermal complex with a fireroom and water and air heating apparatuses (14), and a classic porch, dressing room, swimming pools with hot, warm, and cold water, and space for exercise and walks (16). This residential complex was built in the 1st century, while it underwent minor modifications in the 2nd century.

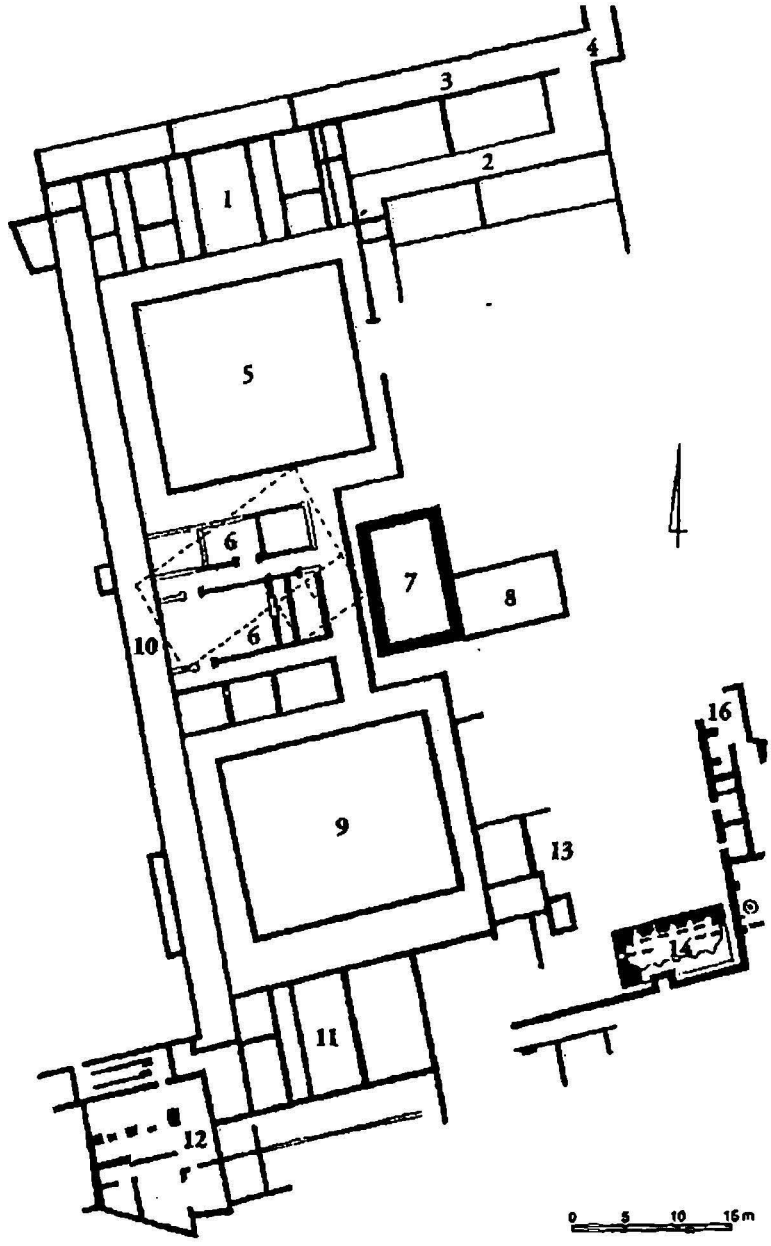

FIGURE 7

[19] V.GIRARDI JURKIĆ, *The Construction Continuity of Rural Villas in Western Istria from the Antiquity to Byzantine Era*, Histria Historica (further: HH), 4, 2, Pula 1983, 88.90; Š.MLAKAR, *Roman Construction Complexes and Interiors of Roman Villas in Poreč Area*, Porečki zbornik (further: PZ), 2, Poreč 1987, 62–63; Š.MLAKAR, *Architectural and Compositional Features of Roman Villas Rustica and Mansions in Istria*, Jadranski zbornik, 15–16, Pula-Rijeka 1995, 39–41.

7. In the context of the Roman villa rustica in Červar Porat near Poreč, explored in the period between 1976 and 1980, a thermal area with a firebox (*praefurnium*) (I), above which the water was heated[20], was excavated in the southern part of the complex.

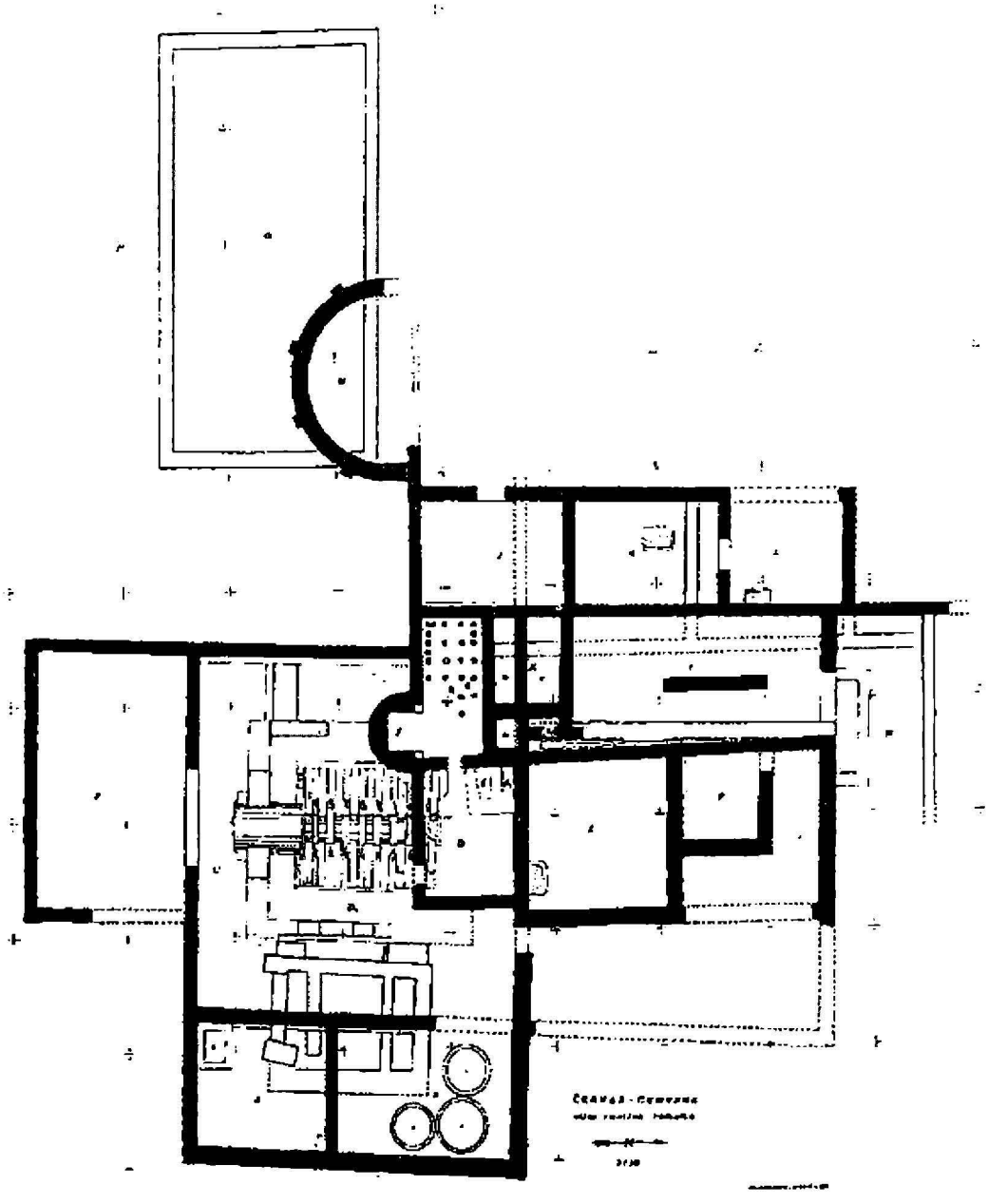

FIGURE 8

This residential area belonged to the second stage of use of the building. Water flowed into a built pool (*alveus*) (H) situated in a semicircular niche. The pool and the sweating room (*caldarium*) laid on short brick columns between which warm air circulated (*hypocaust*).

[20] V.GIRARDI JURKIĆ, *Scavi in una parte della villa rustica romana a Cervera Porto presso Parenzo (I), campagne 1976–2978*, Atti del Centro ri ricerche storiche, 9, Rovigno-Trieste 1979, 263–298; V.GIRARDI JURKIĆ, *The Construction Continuity of Rural Villas in Western Istria from the Antiquity to Byzantine Era*, HH, 4, 2, Pula 1983, 84–88.

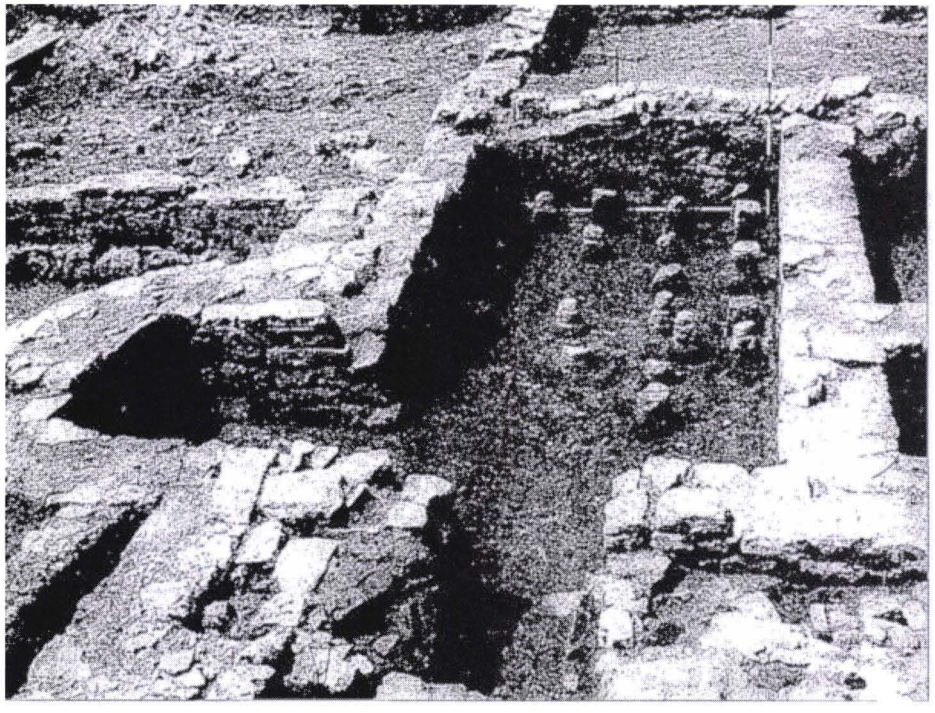

FIGURE 9

In order to maintain the heat in the room, the walls of this private caldarium were vertically lined with inner square tubes (*tubulus*) that had been stacked up on each other to allow the upward flow of heat. The pipes were closed on the top and opened at the bottom towards the space of the hypocaust. Thus excellent thermal insulation was achieved, which allowed the temperature in the steam bath to be between 35–50 degrees. The swimming pool and the floor in the caldarium were lined with bricks. Apart from the caldarium, there were also rooms with warm and cold water pools.

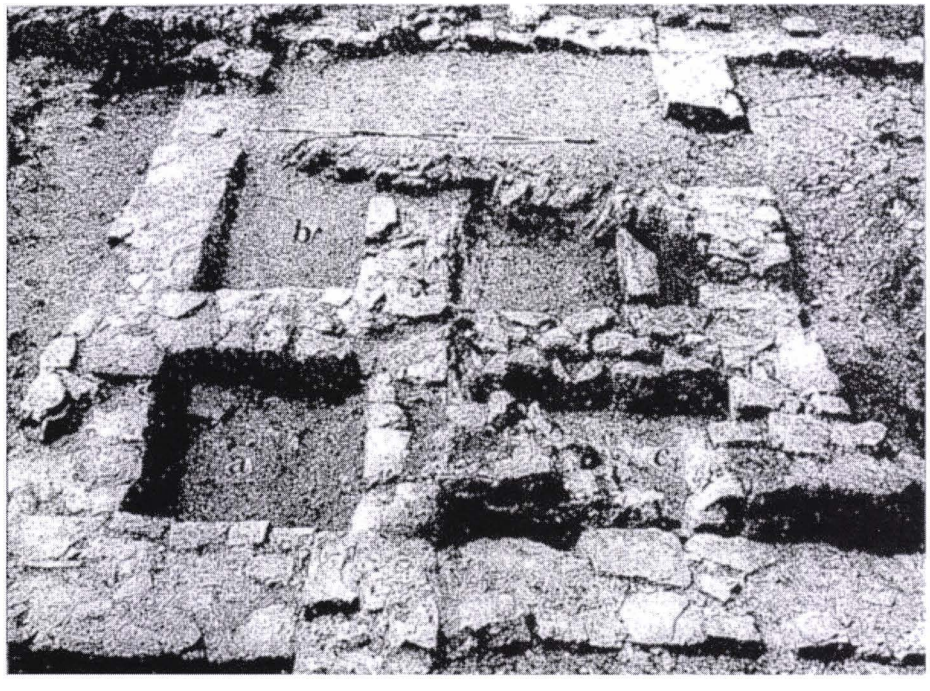

FIGURE 10

There was also a resting room next to the thermal area, and to the east there was a peristyle overlooking the sea. This private thermal complex is part of the housing-production complex, which had been in operation from the mid-2nd century to the 5th century[21].

8. A smaller family *thermae* have been explored in the context of the *maritime villa* in Katoro to the north of Umag. A. Gnirs spotted the building as early as 1908[22], and it was partially and insufficiently researched in 1970. The conservation and presentation of the thermal section: furnaces, room caldarium, tepidarium, and frigidarium with a large water reservoir[23] was carried out at that time.

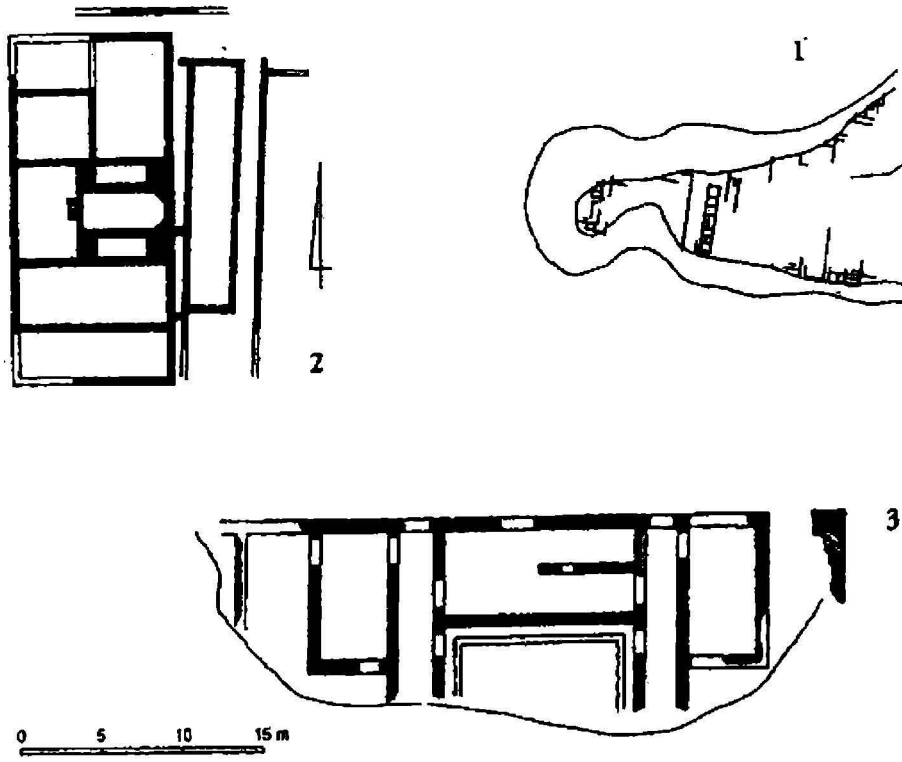

FIGURE 11

9. In recent years, during the excavations of the residential villa complex on Vižula near Medulin, the International Research Centre for Archaeology, University of Zagreb, has discovered a well-preserved large capacity water reservoir. A part of the combustion chamber and suspending posts of a hypocaust with preserved tubuli and water gutters were observed near the reservoir. The excavations have not been completed, and further results are expected, which will certainly determine the existence of the thermal area within this part of the maritime villa[24].

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[21] Also see: Š.MLAKAR, *Roman Construction Complexes and Interiors of Roman Villas in Poreč Area*, PZ, 2, Poreč 1987, 64; R.MATIJAŠIĆ, op.cit, 203–208.

[22] A.GNIRS, *Neue Funde aus der Gegend zwischen Kap Salvore ind Cittanova*, Jahrbuch für Altertumskunde. Wien 1908, 217–218; R.MATIJAŠIĆ, *Topography of Antique Rural Architecture in the Coastline Area of Northern Istria*, Publications of the Croatian Archaeological Society, 11, 2, Pula 1986, 79–81.

[23] Research and conservation carried out by Š. Mlakar, but his manuscript has not been published to this day.

[24] A.GNIRS, *Römische Luxusvilla in Medulino*, Jahrbuch für Altertumskunde, 2, Wien 1908,157; isti, *Istrische Forchungsergebnisse aus dem Gebiete des römische Villenbaues*, Verhandlungen der 50. Versammlung deutscher Philologen und Schulmänner in Grad 1909, Leipzig 1909, 122–123; V.GIRARDI JURKIĆ, *Medulino e i*

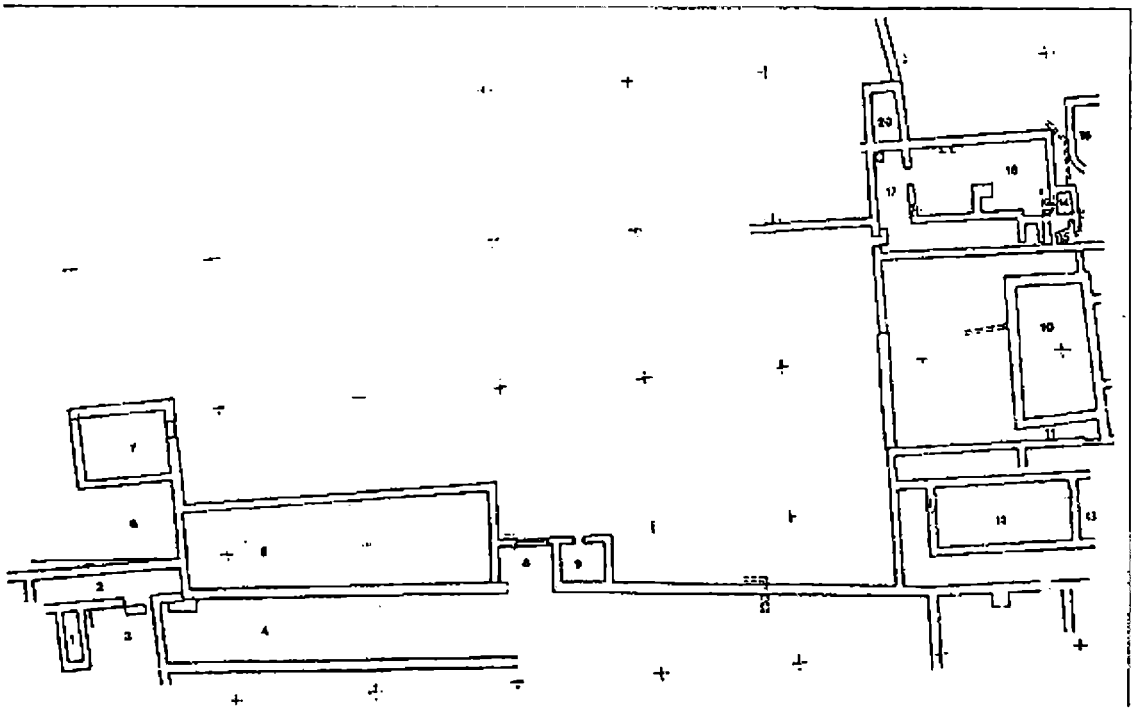

FIGURE 12

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Considering the density of country villas along the western coast of Istria and the importance of cities, colonies and municipalities, it can be concluded that so far the phenomenon of antique thermal baths in the Istrian peninsula has been insufficiently investigated and documented, so that further developments are expected in the near future.

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THERMELE ROMANE DIN ISTRIA
(Abstract)

Roman *thermae* or baths are an unavoidable essence of the urbanistic and project tasks of the Roman architects already from the 2nd century BC, and the construction of the hypocauston, which is in the antique tradition ascribed to Sergius Orata, brought to the perfection of the thermal complexes. A well organized infrastructure of water supply, either by aqueducts, arrangement of springs or building of

public and private reservoirs, favored the building of public and private *thermae* in the urban centers of Istria.

Finds of public and private *thermae*, poorer and richer baths in housing rooms from the Roman period, have been documented in the Istrian area. Entrance was paid for private urban baths while the usage of public *thermae* was generally free since it was subsidized by emperors or other important officials.

Built remains of *thermae* were found in Pula on the area of the Franciscan monastery, where a room was dug out having a floor covered with a mosaic decorated with a kantharos, a swastika and a hippocampus. Not far from the eastern wall of the cathedral of St. Thomas fundaments of another thermal complex were found (Kandlerova street and Naše Sloge street crossing). Remains of house baths of rich making and decorations can be found in Roman urban villas below the central hill of the city. Cold and hot water was brought to the bathing areas with pipes. At the beginning of the 20th century in *Nesactium*, archaeologists dug out a complex of male and female *thermae* with a series of rooms *(frigidarium, tepidarium, sudatorium, caldarium)* which point to the cultivation of the important element of personal hygiene and urban tradition. Technical problems set by the need to heat huge quantities of water as well as the air in the rooms were resolved extremely skillfully...

Smaller family *thermae* were explored in the frame of the *villa rustica* in Katoro near Umag, while larger *thermae* were explored in Sorna, on the hill on the sea shore (they were maybe of public domain), in Červar Porat in the frame of the *villa rustica* and the pottery-brick manufacture. Also important are the *thermae* in Verige bay on Brijuni with a number of accompanying spaces (walk, parks, terraces, library). A thermal complex existed also in the area of the Roman villa with a fish pond in Valbandon near Fažana. Recently, remains of reservoirs and *thermae* were found in the residential complex of buildings on Vižula near Medulin.

Besides these original proofs on the existence of urban (private or public) and residential-domestic *thermae*, reasonable deduction can make us conclude that the most part of the Christian sacral buildings, as was common in the period, were constructed on the area of thermal complexes, as for example in Novigrad (cathedral), Poreč (first oratory), Pula (cathedral) and Ližnjan (little church in Kuje).