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# Fortificazioni e società nel Mediterraneo occidentale
# Fortifications and Societies in the Western Mediterranean

## Albania e Grecia settentrionale

**a cura di**
**Luigi M. Caliò, Gian Michele Gerogiannis**
**e Maria Kopsacheili**

Atti del Convegno di Archeologia, organizzato dall'Università di Catania, dal Politecnico di Bari e dalla University of Manchester
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# The fortifications of Apollonia in Illyria: new research methods and tools for the architectural and historical study

Nicolas Genis

The topographic layout of the fortifications of Apollonia in Illyria is well known since the publication of the *Atlas* in 2007. But the architectural and historical study is still to be done and it is the aim of the project that I lead as scientific member of the French School at Athens. This paper will first present a brief history of the site and a summary of the researches that have been conducted there. The project, methods and tools will then be explained and set back in the context of a broad historical study, which is still a work in progress[1].

## 1. Apollonia: history of the site and panorama of research

Apollonia in Illyria was a colony founded by Kerkyreans and Corinthians in the late seventh century BCE, on the western coast of modern Albania (fig. 1). Its position in the interface between the Greek continental world and the western part of the Mediterranean sea set it as a local pivot in the struggles involving Illyrians, Greeks, Macedonians and Romans, from the Classical period until the Roman conquest and the civil wars.

Thanks to the literary[2], epigraphic[3], and numismatic[4] sources, some large periods of the city's history are well known. The city was firstly engaged in conflicts with its neighbors: with the city of Amantia around 460, and against the democratic city of Dyrrachion in 435. Then Apollonia looked for allies against the Macedonians, successively Philip II and Cassandros, before Pyrrhos, King of Epiros, took over the city in 275. Afterwards the city formed alliances with Romans and Aitolians and thus enjoyed a period of peace: it is the time of a great development in the town. In the second half of the third century BCE, Rome showed its friendship by defending Apollonia against the Illyrian kingdom in 229 and several times against Philip V (in 214, 211, and 205). At that moment the city was included in the province of Macedonia and payed the tribute. During the first century BCE, famous Roman politicians visited Apollonia: Sylla, Cicero, Cesar, Octavius – the latest even heard about Cesar's death right in Apollonia. After the establishment of the Roman Empire, Apollonia was given the *status of civitas libera et immunis* (free and frank city), in return for sticking by Rome all those years. The city's history during the first centuries of the Empire is not well known but, after an important earthquake in 234 CE, a progressive decay is perceived, mainly

1 My first thanks go to the organizing committee of this very thoughtful conference. I also want to thank Sylvian Fachard for his illuminating remarks about the poster layout and contents, and Lavdosh Jaupaj, my colleague from Apollonia, whose help has been absolutely crucial to read and understand the Albanian field reports.

2 For an overview of the literary sources about Apollonia, see Dimo, Lenhardt, Quantin 2007, pp. 39-76.

3 All the inscriptions discovered in Apollonia until the 1990's have been published in the corpus of Greek inscriptions from Southern Illyria and Epirus: *CIGIME* I.2 1997. The inscriptions discovered after this publication are mentioned a first time in the yearly report about the work in Apollonia in the *Bulletin de correspondance hellénique* (see in particular: Cabanes *et alii* 2001, pp. 701-703; Cabanes *et alii* 2004-2005, pp. 1158-1185; Cabanes *et alii* 2007, pp. 1093-1097). They are currently under study by F. Quantin.

4 See all the articles by S. Gjongecaj and O. Picard: Picard 1986; Picard, Gjongecaj 1995; Picard, Gjongecaj 1998; Picard, Gjongecaj 2000; Picard, Gjongecaj 2001; and in particular, their synthesis "Les monnaies d'Apollonia", in Dimo, Lenhardt, Quantin 2007, pp. 81-106.

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Fig. 1. Map of Greek cities around the Adriatic Sea, 8th-3rd centuries BCE (Philippe Lenhardt).

through the episcopal archives[5]: during the 4th and the 5th centuries CE, Apollonia and Byllis are one single diocese; then only Byllis in mentioned and Apollonia gradually disappeared from the Christian councils. The last testimony of the city's activity is an inscription about its walls dating from Justinian's reign (527-565 CE)[6].

There is a narrow connection between the history of the research in Apollonia and the study of its fortifications. As a matter of fact, the city has been early identified with the ruins in the neighborhood of the modern village of Pojani, thanks to the walls, whose large sections could be seen by the first travelers and archaeologists (starting with Cyriacus of Ancona in 1436[7]). On the basis of what was already out of the ground, A. Gilliéron[8] drew the first sketch of the city's map, that is the first plan of the supposed circuit wall around the city (fig. 2). Afterwards, the Austrian archaeologist C. Praschniker[9] conducted the first excavations in Apollonia, as part of a bigger campaign in Albania: he discovered a large section of the eastern wall and made a new plan (fig. 3), with many inner walls that have not been found in recent excavations[10]. The research carried out by the French archaeologist L. Rey[11] from 1923 to 1933 was focused on the city center and on the excava-

5 Cf. the sources in Dimo, Lenhardt, Quantin 2007, p. 55.
6 *CIGIME* I.2, n. 302.
7 Colin 1981, p. 564.

8 Gilliéron 1877.
9 Praschniker, Schober 1919; Praschniker 1922.
10 The excavation campaign in 2014 clarified Praschniker's plans, but not all the remains seen by him have been found. This "disappearance" is due either to thefts or to an approximate setting of his plans. Cf. Lamboley *et alii* 2015, pp. 9-11.
11 See the reports in the periodical revue he created, *Albania*: Rey 1925; Rey 1927; Rey 1928; Rey 1929; Rey 1932; Rey 1935a; Rey 1935b.

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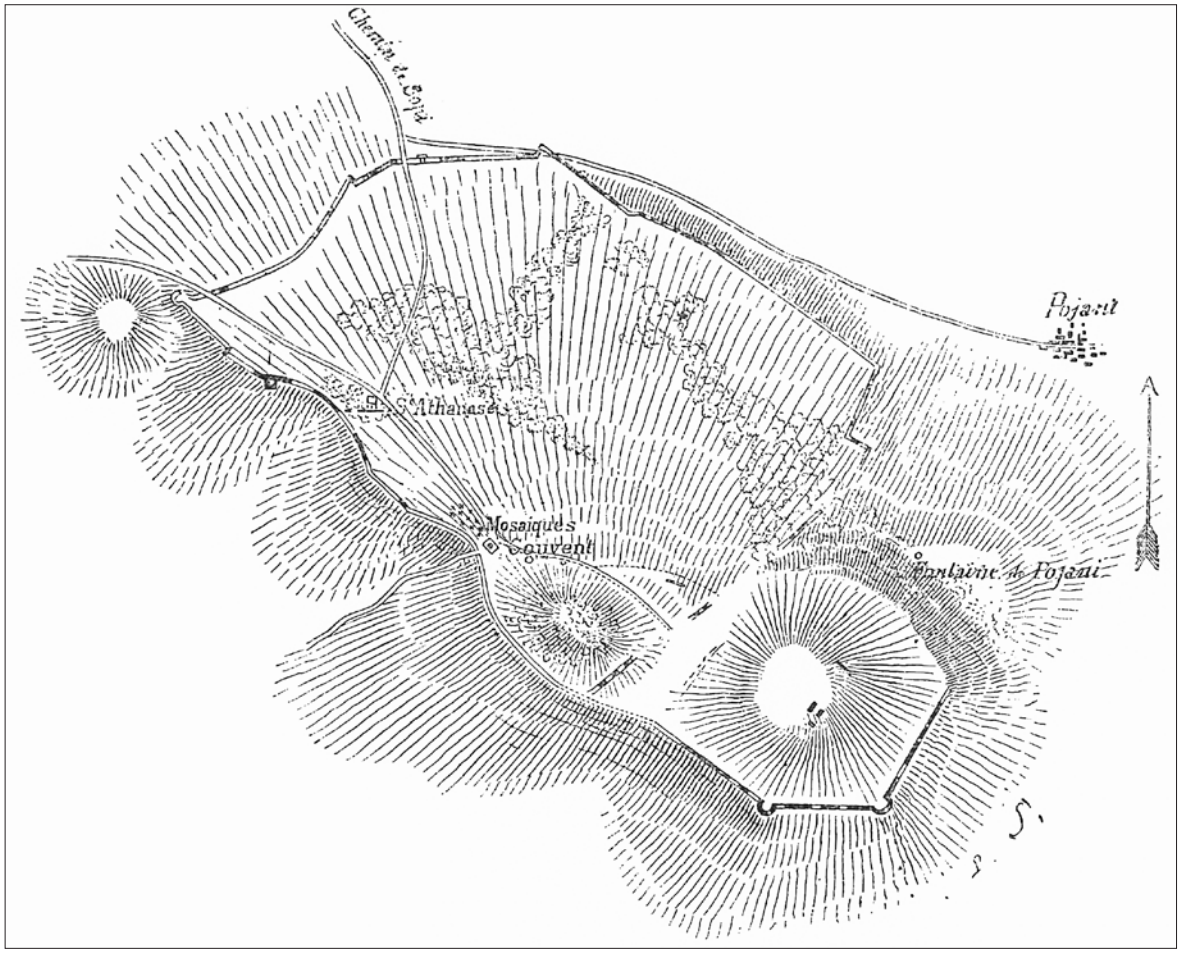


Fig. 2. Map of the fortifications by A. Gilliéron (from Gilliéron 1877, p. 13).

tion of the great public buildings that made Apollonia so famous. The next big step for the study of the fortifications was the Albanian-Soviet excavation in 1958-1960[12] and the Albanian researches that followed, especially those respectively leaded by V. Dimo[13] and L. Koço[14]. New sections of the rampart were then discovered, including several towers and gates, and a new plan was drawn by V. Blavatski and S. Islami (fig. 4). Eventually, P. Cabanes settled a French-Albanian scientific cooperation in 1993 and entrusted C. Balandier, L. Koço and P. Lenhardt to produce an exhaustive map of the surrounding wall (fig. 5). Given the state of the ruins and the abundant vegetation on the site, this work took approximately ten years of field campaigns[15]. It has been published as a chapter of the archaeological and historical atlas of Apollonia, issued in 2007[16], and it is a solid and accurate basis of all the work that needs now to be done in Apollonia, not only for the study of the fortifications, but also for all the others themes and sectors.

In order to truly understand the layout of the wall, one must know the main aspects of the topography of the site. Apollonia is located at the south-west

12 Blavatski, Islami 1960.
13 Dimo 1984.
14 Koço 1987; Koço 1988.

15 Field work reports for the fortifications can be found in Amore *et alii* 1995, pp. 763-778; Cabanes *et alii* 1996, pp. 977-985; Cabanes *et alii* 1997, pp. 857-860; Cabanes *et alii* 1999, pp. 576-580; Cabanes, Lamboley, Vrekaj 2000, pp. 621-624; Cabanes *et alii* 2001, pp. 713-715.
16 Balandier, Koço, Lenhardt 2007.

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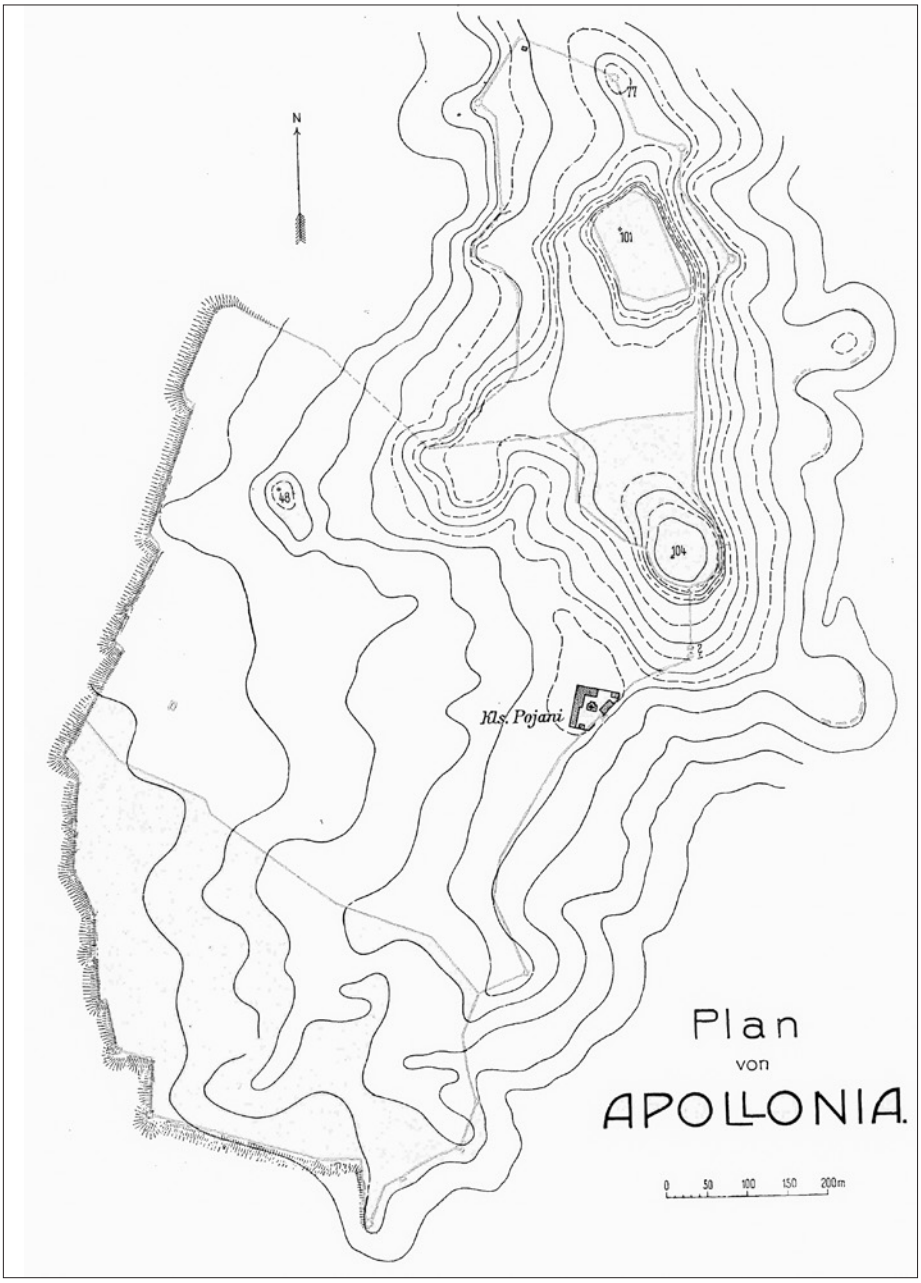


Fig. 3. Map of the fortifications by C. Praschniker (from Praschniker, Schober 1919, p. 70, fig. 86).

end of a promontory, whose eastern side is much steeper than the western side, opening towards a port or a lagoon[17]. Two hills organize the landscape of the town. The northern one is called "the acropolis" and reaches 101 m at its peak; nothing is visible today on it, mostly because it was used as a military base up until 1991. The southern one must have been a second acropolis[18] and reaches 104 m at its peak; ruins of a temple have been documented but a restaurant, formerly L. Rey's house[19], is now sitting on it. Due to the discrepancy between the two hills and the terraces around them, on the one hand, and the rest of the town on the other hand, archae-

17 See the geomorphologic study of the site by É. Fouache in Dimo, Lenhardt, Quantin 2007, pp. 3-13.

18 Like other known cities with two acropolis: Argos or Theangela in Caria, for instance.

19 Rey 1935b, pp. 47-48.

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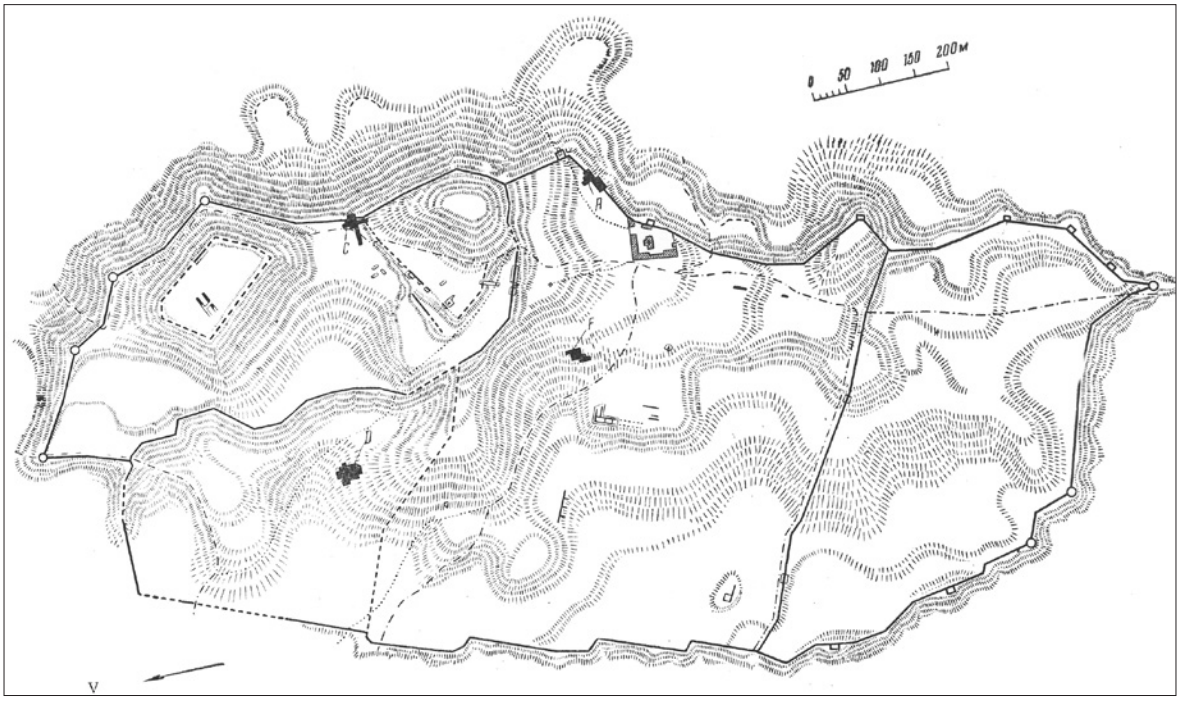


Fig. 4. Map of the fortifications by V. D. Blavatski and S. Islami (from Blavatski, Islami 1960, p. 54, fig. 2).

ologists usually talk about "the upper town" and "the lower town". Recent geophysical prospections have reinforced this distinction with the discovery of two distinctive urban grids[20]. The so-called "blue" grid has been identified in the upper town, between the two hills. It is oriented from the West to the East and is composed of 3-meter-large streets and 13,5-meter-wide insulae. The ceramics found in surveys indicated that it dates from the Archaic period, probably right from the installation of the colony, that must go back to the late second half of the 7th century BCE[21]. The so-called "red" grid occupies the lower town. It is composed of very large insulae (59 m wide and 153,5 m long), separated by 6 to 9-meter-large streets, with a North-West/South-East orientation. It probably dates from the Hellenistic period[22].

Thanks to the exhaustive survey realized by the former team, the main morphological aspects of the surrounding wall are known. Its length is 4 500 meters and it covers a surface of 85,4 hectares. Four gates and ten towers have been identified, as well as two bastions. As shown on the map of 2007 (fig. 5), the conservation of the wall is not homogeneous and does not allow certainty for every section of it. For instance, it is plausible, but yet unknown, that at least one more gate existed in the north-west section.

Moreover, the city wall uses the natural relief of the site and reinforces it. Indeed, on the eastern side, the wall served as a supporting wall (ἀνάλημμα). It is based on the natural defense of the hill and it formed terraces for the inner town space. On the other hand, the western wall must have been much thicker, because it was almost the only construction defending the city in the middle of a flat zone: without any natural defense to use or reinforce, it had to be as strong as possible in itself. Unfortunately, the actual remains are not as good as one would have hoped to confirm that. Only one face is very partially preserved in the western part, where the wall should have been thick and two-faced; on the contrary, the structure is much more visible in the

20 Lamboley *et alii* 2010.

21 For the date of the foundation, see the discussions in Van Compernolle 1953 and Blavatski 1966; at the end, the date is deduced from the earliest ceramics found in Apollonia, see Dimo, Lenhardt, Quantin 2007, p. 129.

22 Buess, Heinzelmann, Steidle 2010; Fiedler, Hesberg 2012.

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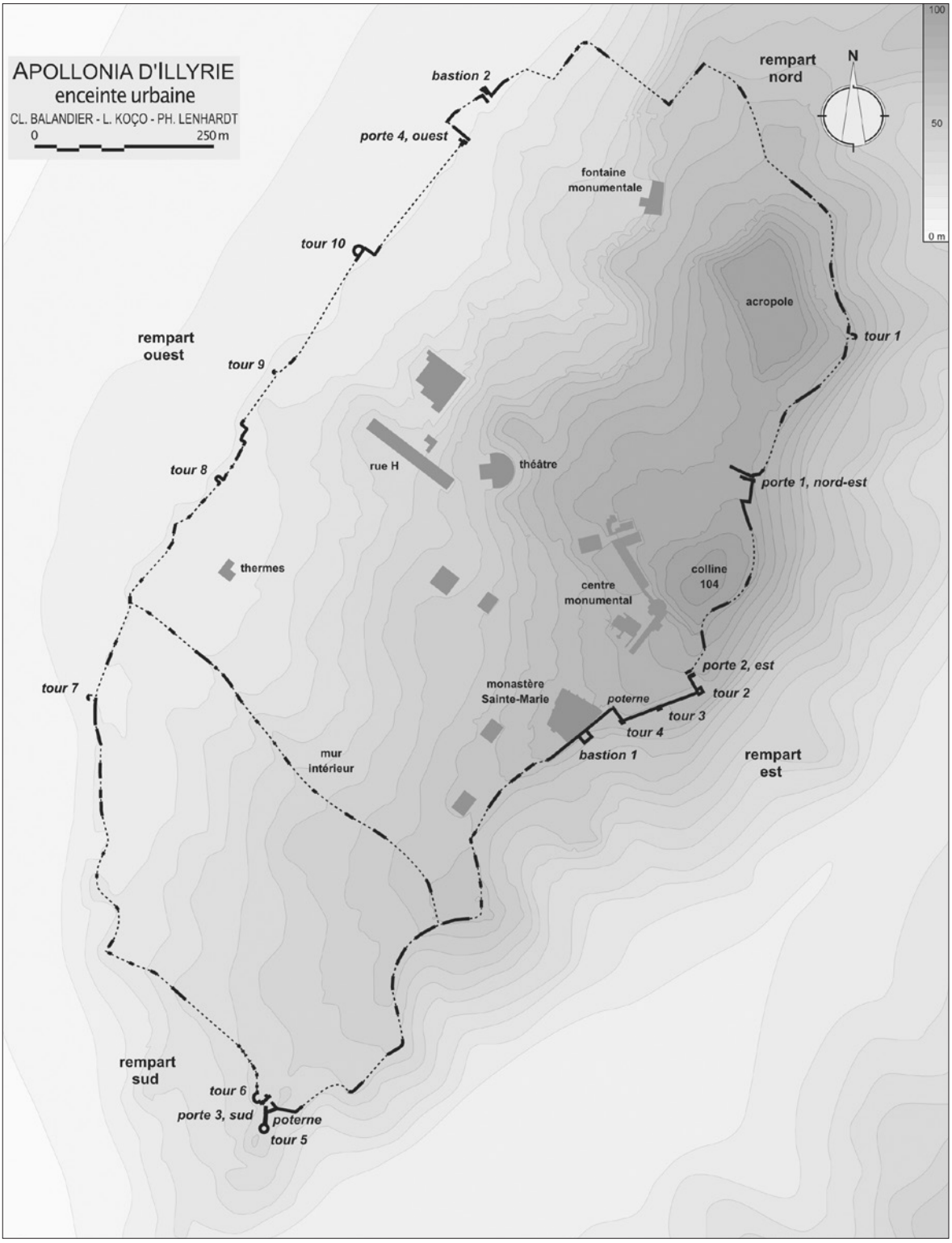


Fig. 5. Map of the fortifications by P. Lenhardt (from Balandier, Koço, Lenhardt 2007, p. 181, fig. 93).

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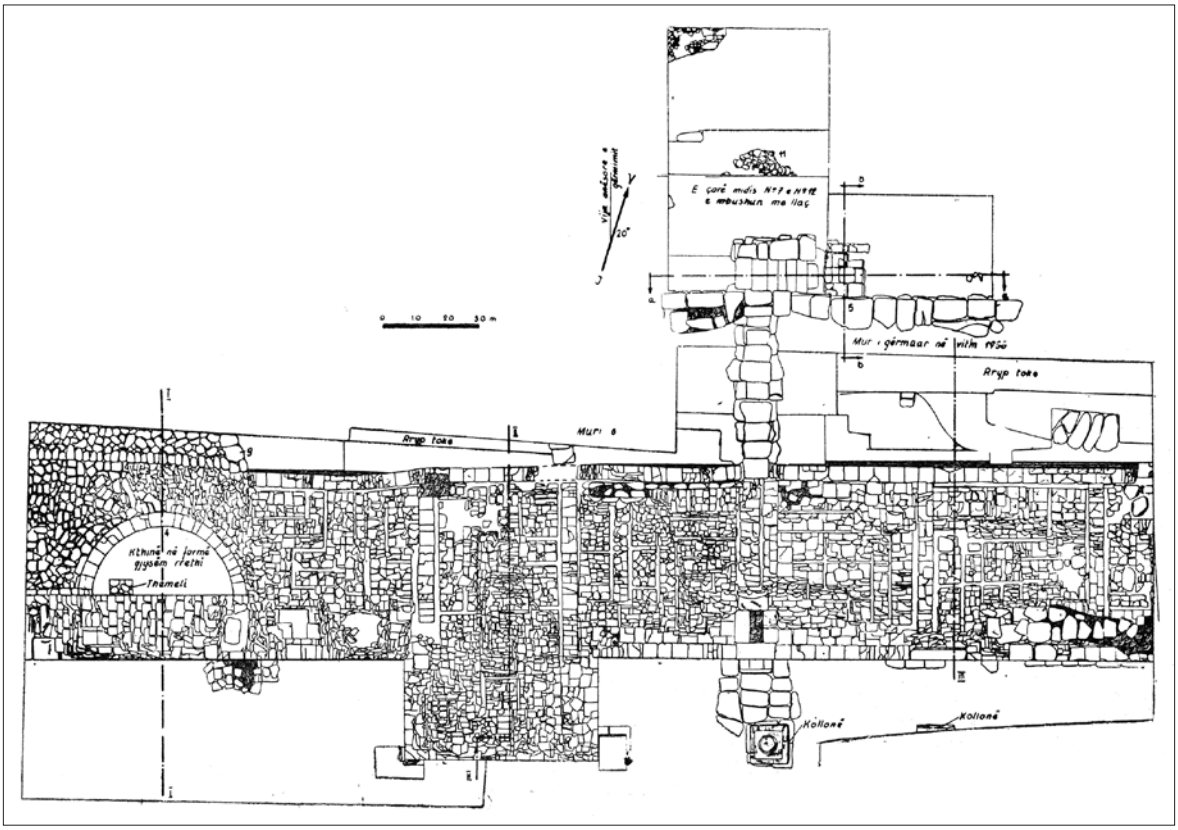


Fig. 6. Plan of the East section of the rampart by V. D. Blavatski and S. Islami (from Blavatski, Islami 1960, p. 59, fig. 6).

Fig. 7. Aerial view of the North-East Gate area (Jean-Baptiste Houal).

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eastern part: a thick wall with two faces is clear in the eastern section (fig. 6) and it is probable in the north-east section (fig. 7).
However, the chronology is still unclear, due to the absence of sufficient stratigraphic data. The most broadly admitted hypothesis identifies three stages in the history of Apollonia's fortifications: first, a wall would have surrounded the upper town and the two hills; then the large circuit wall would have been built, enclosing one of the largest towns in Illyria and even in the Greek world; then, in a much later phase, an inner wall would have been added in order to reduce the length of the surrounding wall and the number of men needed to guard it[23]. But this all remains a hypothesis as long as a deeper architectural study is not carried out and completed by stratigraphic data and strategic surveys. These are the aims of the new study started in 2017.

## 2. The history of the city and the study of its fortifications

The aim of the first extensive study of the fortifications of Apollonia was to draw a complete map of the town and to distinguish between the inside and the outside of the town, in a modern country where national or regional cartography was not usual. It has been a key step for the study of urban planning of Apollonia. Starting from this topographical data, we can now engage in the architectural analysis and in the historical study.
From a theoretical point of view, the study of fortifications has been given aims and methods since the founding symposium held in Valbonne in 1982. P. Leriche then explained the main points about it: absolute necessity of stratigraphic excavation; for most of the fortifications, existence of multiple phases of constructions, repairs and reconstructions that should be identified; importance of a precise study of the building methods; essential link between excavation of surrounding walls and excavation of the inner town buildings; role of the landscape survey to insert a fortification in its geographical context[24].

With these points in mind, it is easy to schedule field activities in order to answer the specific questions asked in the study of a city wall. But we should add a broader point of view, which includes the fortifications in the history of the city. As Y. Garlan noted, the fortifications reveal a project of society and they organize the civic space[25]. More recently, S. Fachard, whil e publishing his study of the Eretrian *chora* and its fortifications, regretted that most of fortifications studies only deal with military and defensive aspects and almost never with their political or civic functions[26]. That is why it is now clear that a new study of any city wall cannot be limited to military architecture, as important as this aspect can be. For Apollonia, the study of the city wall is composed of three perspectives, all deeply linked with history.

*Military architecture and poliorcetic techniques*
By studying the building methods, the different phases, reconstructions and repairs will be identified, as well as later additions. These evolutions will be put in perspective with the advancements of war and siege techniques and with the development of the city. Survey and excavations will offer precise chronological arguments.

*The city walls and the urban development*
Inside the town, on the one hand, we need to identify how the city walls and the other defensive structures organized the urban space, defined the limits of the town center and set the boundaries between quarters. Outside the town, on the other hand, did the surrounding wall correspond to the end of dense settlement or did it work as a symbolic outline of Apollonia? At last, the gates, the towers and the bastions provided physical and visual points of contact between the town and its environment. Depending on the restitution hypothesis, the landscape and the territory will vary, so will the interpretation of the connection of the city with the sea and the hinterland.

*Multi-scale historical and comparative study*
As far as the history of techniques and architecture is concerned, the comparison with other sites and

23 This "later phase" hypothesis is based on the interpretation of a late inscription (*CIGIME* I.2, n. 302). This document needs to be reexamined, so that the understanding of the transversal wall in the southern part of the city might change.
24 Leriche, Tréziny 1986, pp. 11-14.
25 Garlan 1989, pp. 141-142.
26 Fachard 2012, p. 26.

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cities will be helpful, and a centripetal perspective will be followed: other city walls in the region of Illyria, then in northern Greece, and finally in all relevant cities in the Greek world, with a probable focus on colonies, and mostly on Corinthian ones. Following what K. Zheku[27] or N. Ceka[28] have studied, it is necessary to evaluate to which degree the Apollonian fortifications are peculiar, and to which degree they are included in broader evolutions and technical advancements (i. e. regional or Greek). Similarly, the chronology that will be deduced from stratigraphic data needs to be linked with the history of the city and with its civic, social, and urban development. For instance, it is uncertain whether the zone surrounded by the large circuit wall was at first already totally urbanized or still partly an agricultural area; its date should bring some light to this matter.

The new study of Apollonia's city wall, undertaken in 2017, deals with these three aspects and will therefore produce an architectural analysis and chronological data utterly intertwined with the political, social and urban history of the city.

### 3. New tools and new excavations for new data

This project benefits from recent advancements in the techniques of observation and data acquisition in archaeology, especially for the architectural analysis. Since 2017, an extensive photographic and photogrammetric documentation is in progress, mostly with a drone. The significant and conserved features have been documented: the North-East Gate and its curtain; the East Gate and its curtain; the South Gate. The photographs will of course help the study, but they will above all keep track of the actual preservation of the ruins. The aim of the photogrammetric material goes further. The 3D models can indeed provide a better off-site observation than photographs and the attached softwares include tools to take measurements of distance or volumes (fig. 8). This will help the architectural analysis, with the essential questions of module, size and height, both for the blocks and the walls.

Nevertheless, the 3D models cannot replace an architect's drawing and the scholarly interpretation that goes with it. That is why non-distorted, true-to-scale images are exported from the 3D models: those images will be used as a visual and accurate substrate for architectural drawings. This work is in progress for the North-East Gate and curtain and for the South Gate (fig. 9); it will be applied to the other well-preserved features in the next years. Due to the efficiency made possible by these tools, we hope to document them all in three of four field campaigns. For these new drawings, we use the 1:20 scale, in order to get the sufficient material to identify morphological unities and to deduce from them a relative chronology for the different phases of construction and reconstruction.

In addition to this study of what is already uncovered, strategic excavations are scheduled for the next years. For the first step, the French-Albanian team decided to focus the next excavations in the sector of the North-East Gate. Inside the town, this zone is not only in the middle of the two acropolis, but also at the interface between a living quarter dating back to the Archaic period[29], the Hellenistic agora, whose portico has been excavated recently[30] and the so-called "sector C" of the Soviet-Albanian excavations in 1958-1960[31], which is a sanctuary area. The gate is also a connection between the town and the outside: the road going out from the North-East Gate guides to the Kryegjata valley and to the Greek tumulus necropolis, and it is the same road that opens to the Balkans and that becomes the "Via Egnatia" in the second century BCE.

The excavations will therefore deal with all these aspects: the gate itself, its construction, its use, and its transformations; the curtain and the road outside the city; the relationship between the Archaic quarter and the city wall; the modifications of the area in the Hellenistic period and the question of the terrace-bastion and its sanctuary. This program is meant to get precise stratigraphic data in order to

27 Zheku 1980.
28 Ceka 1993.

29 Cf. the excavation reports from 2007 and 2008: Cabanes, Lamboley, Vrekaj 2007, pp. 1082-1090; Lamboley *et alii* 2008, pp. 907-911.
30 Lamboley *et alii* 2011, pp. 243-252; Lamboley *et alii* 2012, pp. 2-56; Lamboley *et alii* 2013, pp. 3-40; Lamboley *et alii* 2014, pp. 3-31; Lamboley *et alii* 2015, pp. 3-8.
31 Blavatski, Islami 1960, pp. 55-58; Anamali 1964.

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Fig. 8. Screen capture of Agisoft Metashape 3D model of the North-East Gate, with scale measure (model made by Mathilde Ferrari).

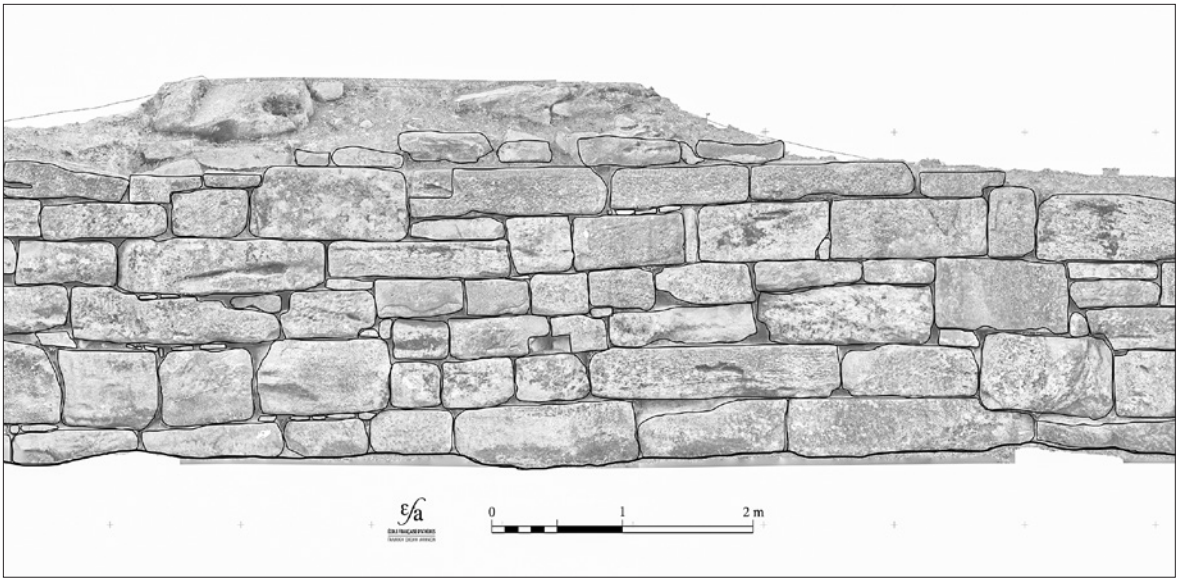


Fig. 9. Architectural drawing based on the orthoimage from the 3D model, work-in-progress (Magali Huille).

be able to have chronological criteria and to date the different phases of the history of this area in general, and of the fortifications in particular.

Three chronological challenges need to be addressed with the new data produced by the excavations. First, we know since the gate has been uncov-

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ered[32] that it has been deliberately blocked, with a two-sided wall with fill. When has it been blocked and what does that means for the fortification system of Apollonia? Once the gate blocked, were there still a path in and out the city in this area? Or does that mean that this side of the city was closed for good? Secondly, the excavation next to the curtain will help to date the construction of these segments and, possibly, their repairing phases. Moreover, it is plausible that the excavations will reveal unknown segments of the city walls, with different orientations. This will be taken into account for the discussion about the phases of the fortifications considered globally and the hypothesis of a first phase only around the upper-town and the two acropolis. Thirdly, the researches concerning the terrace-bastion and the area immediately below it will generate great advances for the topic of the extra- and peri-urban sanctuaries in Apollonia. The cleaning of the curtain wall in 2017 has brought out many miniature vases like the ones found in the "sector C" in 1958-1960[33]. That means either that the terrace is built with a fill made of this votive material (generally dated from the 3rd century BCE) or that the terrace was used for a sanctuary. Furthermore, this type of vases is often associated with the cult of Demeter, that could be worshipped in a Thesmophorion, along with ceramic craft installations. The situation at the limit of the town is ideal for such a sanctuary, but the archaeological researches will have to state whether this ritual activity took place inside or outside the city, and whether the supposed Hellenistic sanctuary was a refoundation of a former one, maybe at the foot of the terrace, or a new cult area.

## Conclusion

This project of a new study of the fortifications of Apollonia is a multi-term and multi-scaled one. The visual documentation is almost entirely done, but the analysis, including the architectural drawings, is still in progress and will need a few more years to be finished. In addition, new data is expected, within the next years, from the future excavations in the North-East Gate sector, but other strategic digging operations will be planned for a mid-term date, accordingly to the issues that will emerge from the first observations and analysis. At the end, the historical study will set the case of Apollonia in broader contexts (Illyrian, colonial and Greek). That will question the specificity or the banality of Apollonia in the global history of fortifications and societies.

32 Koço 1989.

33 Anamali 1964, pp. 143-147.

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SUMMARY: Apollonia in Illyria was a colony founded by Kerkyreans and Corinthians around 600 BCE. It has been identified with the ruins in the neighborhood of the modern village of Pojani, in Albania, thanks to the fortifications, whose large sections could be seen by the first travelers and archaeologists.
Since A. Gilliéron's first sketch in 1882, the study of the fortifications has been widely developed. In particular, C. Balandier, L. Koço and P. Lenhardt have produced a complete map of the walls in 2007 and they have paved the way for questions that still need to be answered.
Since 2017 a new study of the fortifications of Apollonia is in progress, under the supervision of N. Genis. The visual documentation of the walls, gates and towers, is being improved, especially with the support of 3D photogrammetry. New drawings (plans and elevations) will be done to document, study and understand the most important features and the construction techniques used at the same time or successively. Stratigraphic surveys and open-area excavations are planned for the next years in the sector of the North-East Gate, at the interface between the wall and several quarters.
These new operations aim at giving answers to the main questions about the fortifications of Apollonia: date of the construction and of the different phases in the walls themselves, link between the fortifications and the history of the city, interaction of the walls with the inside town-planning.

RIASSUNTO: Apollonia d'Illiria fu fondata da gruppi di coloni provenienti da Corcira e Corinto intorno al 600 a.C. L'identificazione del sito nei dintorni dell'attuale centro di Pojani, in Albania, è stata resa possibile grazie alla presenza delle fortificazioni della città, i cui resti erano già visibili ai primi viaggiatori ed archeologi.
A partire da un primo schizzo disegnato da A. Gilliéron nel 1882, lo studio delle fortificazioni ha conosciuto un ampio sviluppo. Più precisamente, nel 2007 C. Balandier, L. Koço e P. Lenhardt hanno realizzato una pianta completa delle mura, sollevando questioni ed interrogativi che necessitano tuttora di una risposta.
Dal 2017 è attivo un nuovo progetto di studio sulle fortificazioni di Apollonia sotto la supervisione del dott. N. Genis. La documentazione visiva delle mura, delle porte monumentali e delle torri è tuttora in corso e si avvale del supporto della tecnica del rilievo fotogrammetrico in 3D. La realizzazione di nuovi disegni – piante e prospetti – permetterà di documentarne e studiarne le caratteristiche principali e allo stesso tempo di comprendere le tecniche costruttive adottate contemporaneamente o in fasi successive. A tal riguardo, il progetto dei prossimi anni prevede rilievi stratigrafici e scavi a cielo aperto nell'area della Porta nord-est, in particolare verso l'interfaccia tra il muro e i differenti quartieri.
Queste nuove operazioni si prefiggono di rispondere ai principali interrogativi relativi alle fortificazioni di Apollonia: dalla cronologia della costruzione e delle diverse fasi della cinta muraria stessa, alla relazione delle mura con l'urbanistica interna e, ad uno spettro più ampio, con la storia della città.

*Keywords*: Fortifications, Illyria, digital tools, architecture, urban planning
*Parole chiave*: Fortificazioni, Illyria, strumenti digitali, architettura, pianificazione urbana

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