

The contribution of digital cartography to a *Brundisium* (Puglia, Southern Italy) ancient wall reconstruction

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ABSTRACT

Some aspects related to the definition of the *Brundisium* (Brindisi, Puglia) Roman wall will be explored in this work. Historical and contemporary cartography, as well as archaeological data and the city area digital terrain model have been compared by applying GIS technology, hence improving our urban layout understanding. Through the data collected, we will be able to suggest an ancient city wall reconstruction and figure out the possible location of the gates.

KEYWORDS: Roman urban planning, GIS technology, digital cartography, ancient fortifications, Brindisi, Puglia.

The purpose of this work is to explore some of the aspects linked to the definition of the Roman city walls of *Brundisium* (Brindisi), a Latin colony founded in 244 BC along the Adriatic coast of Southern Italy (Puglia) (Fig. 1).

The imposing walls of Brindisi have been mentioned by Roman authors, who described them as secure, impregnable and well visible from afar (Tac. *ann.* III, 1); they also mentioned their gates, walkways and towers (Caes. *civ.* I, 27-28; Cic. *Planc.* XLI, 97; Cic. *Att.* VII, 2; XIV, 13-14; Lucan. II, 607-609; App. *civ.* V, 6, 56).

Our knowledge of these defensive works' technical-constructional features and course – regarding which many uncertainties and controversial speculations still exist (Carito, 1988; Cocchiaro, Sciarra Bardaro, 1988, 13-15; Uggeri, 1988, 56) – is limited due to the very small amount of useful information available from an archaeological standpoint.

The difficulty in reconstructing the wall course is mainly due to the scarcity of structural remains, which are often hard to interpret; sections of walls have been identified in different

parts of the city, while whether they are from Roman fortifications is often uncertain².

In the northern part of the city, some of these can be definitely attributable as such: a portion of structure made in *opus quadratum*, still visible along Via P. Camassa (Cocchiaro, Sciarra Bardaro, 1988, 37 no. 70) (Fig. 2, a); and the remains of a gateway (about 200 m further east from the previous find), discovered in the 19th century but later destroyed (Cera, 2008) (Fig. 2, b).

The reconstructed course suggested by this evidence would follow the 'Collina di Ponente' hillside, with a layout that adapts to the terrain's morphology. The hill in the northern part of the city, overlooking the internal harbour (Seno di Ponente), is characterised by steep slopes towards the sea. The walls were built along the lower part of the hillside so that the natural defences of the slope could be enhanced, while

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2. In particular, see Piazzetta Alberione (Cocchiaro, Sciarra Bardaro, 1988, 13e, Fig. 4; http://www.fastionline.org/excavation/micro_view.php?fst_cd=AIAC_3526&curcol=sea_cd-AIAC_5761; in Via Montenegro (Cocchiaro, 1992); in Piazza Duomo (Marzano, 1954, 23, 25e, Fig. 18); and below the Scalinata Virgiliana (DELLA MONACA, 1674, 53; http://www.fastionline.org/excavation/micro_view.php?fst_cd=AIAC_3526&curcol=sea_cd-AIAC_5761).



FIGURE 1. The Salento peninsula (Puglia, Southern Italy) and the location of Brindisi.

the slope itself could be contained and fortified as terracing.

Given the lack of data for the rest of the defensive wall, other types of sources needed to be assessed. Historical maps, for instance, often provide relevant topographical information which helps to better grasp the past geography. We therefore compared historical and contemporary cartography by applying GIS technology; specifically, we overlaid a piece of Brindisi aerial photogrammetry on a city map made in 1739 by the Spanish marshal A. de Los Coves (Fig. 3)³; and did the same with an historical map published in 1781 by the military engineer Andrea Pigonati (Fig. 4)⁴. The resulting images showed that the Aragonese walls – built in the second half of the 15th century and strengthened in the following century under the emperor Charles V – used to surround much of the city’s historic centre but are now largely lost.

The question to ask is whether the course of these walls was the same as in the Roman Age.

3. *Plano y Mapa En que se comprende la Ciudad de Brindisi, sus Castillos de mar y tierra, Puerto piccolo y Grande con porción de los contornos de su Campanea en la Provincia de Otranto*, first published by CAGNES Pietro, SCALESE Nicola (1978). *Cronaca dei Sindaci di Brindisi 1529 – 1787*, Brindisi: Edizioni Amici della “A. De Leo”.

4. This plan, with the title *Topografia della Città e Porti di Brindisi*, forms part of the volume *Memoria del riaprimiento del porto di Brindisi*, describing the work to recondition the access to the inner harbour, entrusted to A. Pigonati by King Ferdinand IV of Naples.

Using digital cartography, we examined the distribution of archaeological data, including burial sites and necropolises, which might indirectly suggest the course of the Roman defensive wall.

We can see how this evidence, widely attested on the periphery of the modern city centre, is located just outside the line of the Aragonese defences, suggesting the Aragonese and Roman walls coincide along their west and south sides (Fig. 5). Particularly of note are the findings attested to the west along Via Cappuccini and Via Osanna (for example, see Cocchiaro, Andreassi, 1998; Cocchiaro, Sciarra Bardaro, 1988, 28, 32, 38 no. 7, 17, 19, 83; Cocchiaro, Marangio 2006; Cocchiaro 1992a; Cocchiaro 2015); and to the south near Porta Lecce (Cocchiaro, Sciarra Bardaro, 1988, 27, 31, 32 no. 10). In both cases, the archaeological data particularly focus on the two main roads connecting with the rest of the territory: Via Appia (Uggeri, 1983, 224-226; Cera, 2019, 143-144), coming from the west, and the so-called Via Traiana Calabria (Uggeri, 1983, 275-276; Guacci 2018), running southwards.

Further evidence of the wall’s westerly reconstruction is a moat discovered along the Via Bastioni San Giorgio (Cocchiaro, 1991). Made during the Republican period in connection with the western side of the fortifications, this work suggests that the latter course is the same as the Aragonese one.

The very presence of a moat here is not surprising: in fact, this is the most exposed side of the city, neither surrounded nor defended by the sea and with no high terrain.

Such a context seems to be evoked in a passage by the historian Appian, describing the siege of Brindisi by Anthony in 48 BC. During the siege, Anthony ordered a trench to be dug and bulwark to be erected, cutting and fortifying the isthmus so that it became impossible to reach the city from the hinterland (App. civ., V, 6, 56).

Archaeological data concerning the east and south-east city limits are almost absent. We are only aware of some Roman graves discovered along the slope of the eastern hill (Collina di Levante) (Cocchiaro, Sciarra Bardaro, 1988, 28, 68 no. 20). The tombs’ location indicated in the Digital Terrain Model corroborates our

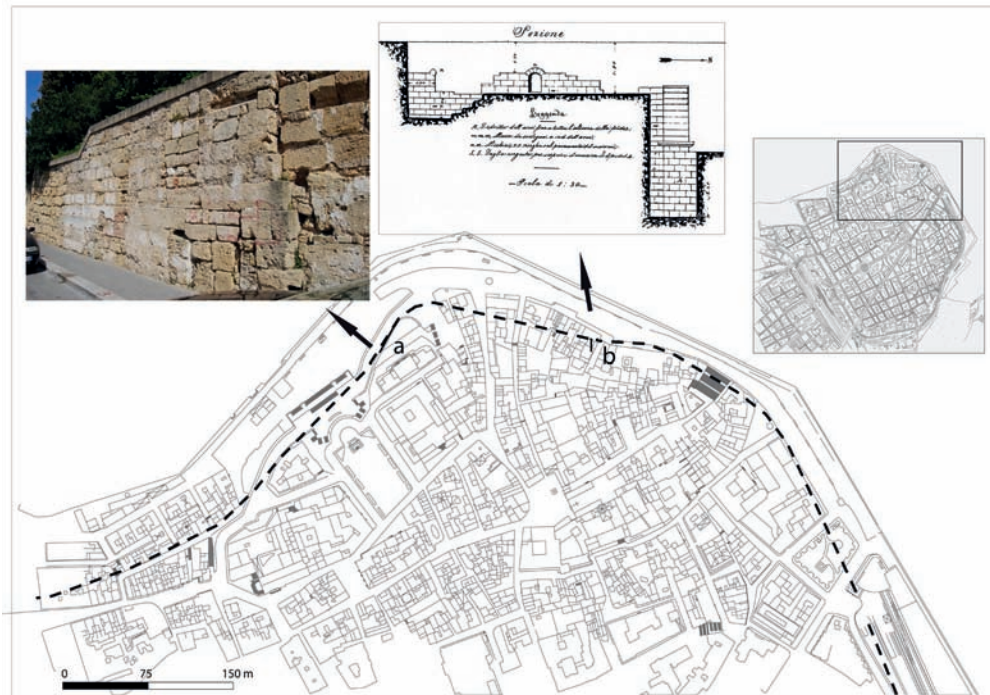


FIGURE 2. Sections of wall belonging to the Roman fortifications, identified on the north side of the city.



FIGURE 3. Overlap between the Brindisi aerial photogrammetry and the map of the city, drawn up in 1739 by the Spanish marshal A. de Los Coves (*Plano y Mapa en que se comprende la Ciudad de Brindisi, sus Castillos de mar y tierra, Puerto piccolo y Grande con porción de los contornos de su Campanea en la Provincia de Otranto*).



FIGURE 4. Overlap between the Brindisi aerial photogrammetry and the map published in 1781 by the military engineer Andrea Pigonati (*Topografia della Città e Porti di Brindisi*).

assumption that the wall's course followed the upper edge of the hill, with its steep slopes projected towards the coastline (Fig. 5-6).

The location of the city's main gateway will also be a focus of our study and contribution.

In this respect, an analysis of the *Brundisium* ancient road network offers interesting insights. Using topography, we can recognise the main *Brundisium* west-east thoroughfare in the courses followed by the Via Carmine, Via Fornari, Vico Palma, reaching Piazza Vittorio Emanuele I in front of the inner harbour (Fig. 6). Also, a stretch of Roman road surfacing brought to light in 1979 along Vico Palma (Jurlaro, 1979, 161; Cocchiaro, Sciarra Bardaro, 1988, 15) confirms the antiquity of this alignment, partly recognisable also on historical cartography.

There is a coincidence between the limits of this road and the west gate in the Aragonese wall, i.e., Porta Mesagne, suggesting a possible correspondence with a Roman Age gate, through which the Via Appia entered the city (Fig. 6).

Less certain is the opening through which the Via Appia Traiana (formerly Via Minucia), coming from the north, entered the city. Some scholars agree that it re-joined Via Appia before reaching the city (Uggeri, 1983, 262; Cocchiaro, Sciarra Bardaro 1988, p. 16).

Another hypothesis would be that the road enters *Brundisium* through a different gate located further north than the above-mentioned Porta Mesagne. In the suburban area, close to Ponte Grande, the Via Appia Traiana is indicated by a large necropolis featuring incineration graves, signs, inscriptions and funerary monuments (Cocchiaro, Sciarra Bardaro, 1988, 24-25, 35 no. 50).

Another necropolis located behind the walls and evidenced by the archaeological findings in Via Provinciale San Vito and Via De Carpentieri seems to indirectly document the next stretch of the road running towards the city (Cocchiaro, 1996; Cocchiaro, 2002-2003).

This road's course, almost entering the urban area, matches the alignment of Via Castello - Via



FIGURE 5. Brindisi: the distribution of Roman graves, necropolis areas and funerary inscriptions compared with the historical and modern cartography.



FIGURE 6. Brindisi: the distribution of graves, necropolis areas and funerary inscriptions compared with the digital terrain model and modern cartography. The dotted line reconstructs the urban road network and the wall circuit of the Roman period.

Santa Barbara - Via Tarantini, in which one of the main *Brundisium* south-west / north-east roads could be recognised. After considering the above, it is likely that a gate – possibly smaller in size than Porta Mesagne – existed somewhere around ‘Torriione dell’Inferno’ of the Aragonese fortifications (Fig. 6). Moreover, a street approaching the Aragonese walls and heading towards Torriione dell’Inferno also appears in the above-mentioned 18th-century maps of Brindisi (Fig. 5).

Along the southern side, an indication of a gateway somewhere around Porta Lecce adds to the analysis of the 15th-century walls. Looking at this area from a geomorphological viewpoint, we can understand why the gate would have been built right here and its value over time, as a slight natural depression in the land was ideal for creating an access point to the city.

Again, an analysis of the urban road network provides fresh insights. The find of a Roman stretch of road along Via Lauro (Palazzo, 2015) (Fig. 6) enables us to identify an ancient but preserved north-east/south-west axis in the current Via Lauro / Via Conserva, whose southern edge is located at the Aragonese gate. In addition, the hypothesis that the Roman gate was in this area is indirectly confirmed by some archaeological data; just outside Porta Lecce, numerous funerary inscriptions and Roman graves (for example *CIL*, IX, 43, 82, 107, 111, 137, 6100, *AE*, 1990 = *EDR*, 171681, 17304, 104494, 17316, 171977, 171485, 81742) – indicating here the limits of the urban area – have come to light. Finally, the find of a Maxentius milestone (309 A.D.) (*CIL*, IX, 6076 = *EDR*, 77731) seems to identify, in this area, the beginning of Via Traiana Calabria, the road that, leaving the city, ran in the direction of Otranto.

CONCLUSIONS

Starting from scanty archaeological data relating to the *Brundisium* walls, we have put forward a new reconstruction hypothesis based on a comparative analysis of archaeological evidence, historical and modern cartography, and the terrain’s geomorphological characteristics.

Archaeological remains that can be related, with certainty, to the walls have been found on the northern side of the city only. Their location clarifies the path taken by the fortifications, which ran along the lower part of the hillside; i.e., ‘Collina di Ponente’ (corresponding to the northern hill), consolidating and making the city even more difficult to attack.

Without any structural remains on the other sides, the course taken by the walls has been hypothesised by observing the location of Roman graves and funerary inscriptions, which characterise the areas outside the urban area. Using GIS technology to study their location and comparing with historical cartography, we can see that the main necropolises were located outside the Aragonese walls, clearly evident in 18th-century maps. Consequently, the latter are assumed to have largely followed the fortifications of the Roman period.

A topographic analysis also enables us to hypothesise the location of the city’s main gateway. A comparative examination of historical cartography and a digital terrain model, as well as the archaeological finds relating to the urban road network and Roman necropolis, help to identify two of these in the area around Porta Mesagne and Porta Lecce; i.e., the western and southern gates in the Aragonese walls.

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