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Aegean Sea Islands and Ports
through the Isolarii
of the Fifteenth and Sixteenth Centuries

Abstract

This paper investigates the period between 1420 and 1528 and the publications of the first known island maps known as Isolarii. Through a comparative analysis of the cartographic material, it is possible to discover the method of map-making, the changes, the corrections, the copies and the errors of the cartographer. Moreover, it is possible to compare the main elements, which formed the cities and their port installations with their representations in basic symbols of early cartography. The research proves that those symbols provide generally secure historical information for the structure of the cities and the ports. The research focused on five Aegean Sea islands and their main cities and ports of that period. These islands are Naxos, Mykonos, Mytilene, Patmos and Samos. The cities, with their port installations, are Kastro of Mytilene, Chora of Patmos and Tigani of Samos. The cartographic material is part of Liber Insularum Archipelagi compiled in 1420 by Cristoforo Buondelmondi, the Isolario of 1485 by Bartolomeo dalli Sonetti, the Kitab-i Bahriye of 1521 by Piri Reis and the Isolarlo of 1528 by Benedetto Bordone. The paper is based on part of the research project Isolarii 15th-17th centuries, by D. N. Karydis, G. Tolias, C. Koumarianou, N. Belavilas, Th. Strongilos, Y. Baladié-Triantaphyllidou, National Technical University of Athens, Athens 1997.

This paper is based on a research project entitled Cartographic Records of the Greek Coasts and Islands – Isolarii of the Fifteenth to Seventeenth Centuries conducted over the period 1995-1996. One section of the project examined the relationship between actual data and the information recorded on the maps and attempted to draw conclusions as to the reliability of that information on the levels both of overall geographical surveying and of depiction of the urban image of specific ports on the islands.
The sample consisted of maps produced during the first century of systematic cartography in the Aegean. From the methodological point of view, it was decided to use the process of comparing and checking the maps in their chronological sequence against known geographical and urban data. The maps examined were from the first four cartographic undertakings known to us: the Liber Insularum Archipelagi of Cristoforo Buondelmonti, dating from 1420, the Isolario of Bartolommeo dalli Sonetti, of 1485, the Kitab-i Bahriye of Piri Reis, produced in 1521, and Benedetto Bordone's Isolario of 1528. These collections of maps have the same subject and we know that they had a clear impact on one another; furthermore, they did much to determine the evolution of cartography in the Mediterranean during the period that followed, down to the end of the eighteenth century. Five islands were selected for comparative analysis; specifically, Naxos, Mykonos, Patmos, Samos and Mytilene, thus covering the geographical and political units of the Aegean at the time in question.

The research revealed that the material recording the Greek islands from the fifteenth to the seventeenth century continues to constitute a very important field for Greek historiography. In that sense, we believe that our results will help to fill a gap in the sector. Perhaps for the first time in Greece within the framework of formal academic research conducted by a technical university, we attempted to check the historical data (in the conventional and narrow sense of the term) against particulars of built space in the specific search field. However, given that in the process of surveying at the period in question the preparation of a map (design, collection and elaboration of information), and the management of the material made up a complex procedure with much overlapping, a considerable volume of research work is still required in order to reveal and utilise to the full all the information concealed behind the materials produced during the centuries in question.

The work is prohibitively extensive for detailed presentation within the framework of an international conference, and for that reason we shall confine ourselves to an indicative
The large island of Naxos seems to have caused considerable difficulties for the cartographers of the fifteenth and sixteenth centuries. Cristoforo Buondelmonti drew what is clearly an original map, probably travelling to the island in person in order to do so, but it is highly inaccurate. Bartolommeo dalli Sonetti produced a map of greater accuracy than the other cartographers. Piri Reis seems to have known both these maps and to have used information from them, supplementing the map of Naxos with new and original data. Benedetto Bordone created a faithful copy of dalli Sonetti’s map, altering the orientations and symbols so as to create the misleading impression that his was a new map. The most interesting feature of the comparison between the maps is the greater accuracy with which the geophysical background is recorded and the precision of the coastline near the island's main port.

The Venetian Kastro of Naxos, the island’s principal settlement, was treated by the cartographers in an analogous manner. When Cristoforo Buondelmonti drew it, Kastro was already two centuries old. It was the Venetian capital of the “Ducato” of the Aegean, founded by Marco Sanudo and his comrades in 1207 after the Cyclades fell into their hands. After the building of Kastro itself, we know that it extended outwards during the fourteenth and fifteenth centuries, with the formation of the Bourgo and Agora districts. On Buondelmonti’s map, Kastro is shown next to the coast; the enceinte is square, and has a tower at each corner. This is the earliest information that has come down to us about the form of the fortifications. The gate to Kastro has been drawn in on the side facing the sea. Bourgo is marked on the map as a second square enceinte extending out from the first towards the sea. It has a lower wall than the main Kastro, and its enceinte lacks towers. Inside the walls, Buondelmonti drew buildings to represent houses. At the foot of Kastro on its west side, Buondelmonti differentiated the sandy beach from the Kastro hill, noting the position of the harbor without giving any further information. To the north-
east, his map shows the Fountana, the spring supplying the town and the harbor with water. The islet of Palatia, to the north-west of the harbor –where the half-finished ancient temple of Bacchus still stands– is shown close to the coastline and named Strongylo. The temple, too, is marked, but Buondelmonti marks it as a fortress.²

Bartolommeo dalli Sonetti,³ drawing the Kastro and its surroundings in 1485, provides more information than Buondelmonti. The coastline around Kastro is shown in a manner corresponding closer to the true geophysical conditions. The main fortress is depicted as a triangular enceinte with towers –each of a different shape– at each corner. Bourgo seems to be surrounded by a square enceinte, the south-east corner of which stands on a steep cliff and is protected by a tower. This picture is very close to the arrangement on the hilltop, which can still be discerned there today. On the drawing of the town, Bourgo has one gate on the side facing the coast and another on the outer side of the tower, at the top of the cliff. Inside the two enceintes are drawings of buildings to symbolize houses. At the foot of the Bourgo enceinte, the harbor is shown as partially enclosed by two curving breakwaters. The Fountana spring is marked on the map to the north-west of Kastro. On the island of Bacchus, drawn separated from the main island by a narrow channel, the base of

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fig. 2: The Venetian Kastro of Naxos, Piri-Re’is, 1521; Benedetto Bordone, 1528.

A ruin is shown in a more realistic position than that of Buondelmonti. To the south of the harbor is a small tower.

Piri Reis mapped Naxos in 1521, during the course of large-scale sea-borne assaults on the Latin-occupied islands of the Archipelago and 16 years before the campaign of Khayreddin Barbarossa, which led to the downfall of the Duchy of the Aegean. On the part of the map, which shows the Kastro of Naxos, Reis drew a dense urban complex in which no enceinte of the kind depicted by the earlier cartographers can be seen. Kastro and Bourgo are two abutting sets of tower-like buildings. The symbols for the buildings convey an image of two-storey and three-storey structures with windows on the upper floors; some of the buildings have doors on the ground floor. This picture of the buildings –the same in the outer district as in the centre– is closer to the way the town of Naxos actually looked in the early sixteenth century than that of a fortress with clear and distinct geometrical enceintes presented by the other maps. The error on Reis’s map lies in his depiction of the town as running right down to the sea, which Naxos does not seem to have done at any time prior to the twentieth century. Along the coast to the west of Kastro, Reis drew in the harbor with its two curving breakwaters and marked the rocks which were a hazard to ships. The interesting addition made on this map is its indication of an
anchorage, which was then included systematically on the naval charts of the subsequent seventeenth century. Boats are shown moored to each of the piers, and a large three-masted sailing-ship is depicted at anchor off Prokopi, to the south of the town, presumably as an indication that ships could safely do this. In the text which accompanies the map, Reis reports that the harbor was man-made and could accommodate small vessels. The islet with the temple of Bacchus is shown at the edge of the Kastro promontory, close to the main island, and a chapel is marked on it rather than the ruins of the temple. Piri Reis does not mark the Fountana spring at all.

Last among our cartographers, Benedetto Bordone mapped the Kastro of Naxos in 1528, and a systematic investigation of the particulars he included shows that he copied the position, outline and form of the island from dalli Sonetti. Other maps in his Isolario were copied in a similar manner. It is, of course, interesting that he turned the position of the island on the map, as we saw above, and that he plotted it in a different way, a device to convey the misleading impression that the map had been redrawn. Bordone added titles to the symbols, describing the Fountana spring as a 'fonte', and marked the temple on the islet with a symbol indicating a round open-mouthed well. In the harbor, he shows only the south breakwater of the two drawn by dalli Sonetti.

The fortified settlement of the Kastro and harbor of Naxos is mapped in an abstractive manner in all four cases examined here, but its form, size and natural setting are shown with accuracy. Kastro and the towers of its enceinte, the outer gates, the Bourgo district with its low wall, the Fountana spring (a feature of importance for the town), the islet of Palatia, the harbor with its breakwaters, and the empty belt between the walls and the coast are all included on the maps. The maps of dalli Sonetti and Piri Reis, in particular, contain all the information necessary to recognize the town from land or sea, together with what a sailor approaching by sea would need to know. The most interesting information on the maps concerns their depictions of the fortifications and breakwaters, by means
of which it is possible to supplement our knowledge of the late medieval town of Naxos with elements which have left no structural traces.

If we continue, using the same method, to examine the maps in the isolarii, investigation of the outlines of the islands and the identification of unique historical data about the urban organization of the Aegean towns will prove to be rewarding.

On the maps in the isolarii, it is easy to recognize the characteristic shape of the fifteenth-century fortress in the small Kastro of Mykonos, which reflected the outline of the little promontory on which it was built and was confirmed by research in the Sixties and Seventies. Guided by the isolarii maps, one can identify the south harbor as it actually was in the fifteenth and sixteenth centuries and spot the traces of the jetty now on the sea-bed off Paraporti. The nature of the fortified enceinte, with buildings whose windows look out to sea and not with a properly-organized wall (dating probably from late Venetian times), is also shown abstractly, as is the main tower of the fortress, of which only the foundations have survived. If one rounds out the distillation of information provided, one can conclude with confidence that the depiction of this coastal Kastro is generally accurate and neither imaginary nor symbolic in the extreme. The maps show space clearly, and in proportion. I believe that the deciphering of the ‘alphabet’ of symbols, a task which quite a number of researchers have already undertaken, will produce still more information.

Once away from the main harbor of Mykonos, however, the inaccuracy with which the general shape of the island was mapped becomes outrageously blatant. None of the cartographers seems to have sailed round the island, and all are ignorant of anything but the west coast. Piri Reis approximates most closely to the true outline of this stretch of coast, and Buondelmonti has the largest number of errors. Once again, Bordone copies dalli Sonetti, repeating his device of changing the orientation and the symbols.
On Patmos in the Dodecanese, an island whose history has been quite different from that of the Venetian-occupied islands of the Cyclades, the predominant element in human habitation since 1088 has been the Monastery of St John the Divine. Accentuation of the Monastery and particular emphasis on its bulk dominating the centre of the island was a characteristic found on all the maps showing it down to the eighteenth century. Thus, while most cartographers used a single symbol
for all the churches and monasteries on the island, they tried in the case of the Monastery of St John to convey the massive fortified buildings in a realistic manner. The sheer size of the Monastery, its complete domination of the island until the coastal settlement of Skala was built in 1600, and the prestige enjoyed by the foundation throughout the Aegean all fully justified this differentiation in the symbols. This, in all cases, the monumental complex of the Monastery of St John the Divine is shown in accordance with its true picture as it towers above Skala harbor, on a scale much larger than usual. It is also interesting to note that, unlike the depictions of other ekistic complexes in the Aegean, here the cartographers completely ignored the existence of the small settlement of Chora, which had grown up around the foot of the Monastery walls in the fifteenth century.

In mapping Mytilene, adjacent to the Ottoman Empire, Piri Reis achieved results perhaps better than any of his other Aegean maps. The particularly complicated shape of this large island was captured by the Turkish cartographer with much greater accuracy than his Western colleagues had managed. The urban structure of the Kastro of Mytilene in the fifteenth century is recorded with considerable accuracy in the miniatures on the maps, with details of the fortified town, the promontory, the two harbors, the sea tower at the north harbor with its breakwater (where one of the first lighthouses of
modern times was built in the eighteenth century), the moat and the bridge. The new information added by these cartographers includes the moat which separated the Kastro hill from the flat ground, the shape of the breakwater (traces of which have survived on the sea-bed off the north harbor), and the tower or lighthouse, which re-appeared on eighteenth-century depictions and of which only the undersea foundations are the only surviving trace.⁸

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fig. 6: The Kastro of Mytilene, Christoforo Buondelmonti, 1420; Bartolommeo dalli Sonetti, 1485.

fig. 7: The Kastro of Mytilene, Piri Re'is, 1521; Benedetto Bordone, 1508.
In the case of Samos, the mapping of Piri Reis is once more the most accurate, as indeed it is throughout the islands of the eastern Aegean. All cartographers emphasize the ruins of the ancient city – and, quite without justification, Buondelmonti shows a fortified tower on the same site as the Sarakini Tower, which was not constructed until almost a century and a half after his time.9

An examination of the sample of five harbors mapped by Buondelmonti, dalli Sonetti, Bordone and Piri Reis reveals a series of original conclusions to be drawn in connection, on the one hand, with the evaluation of the cartographic material itself and, on the other, with the image per se of the space recorded. It would appear that research has not yet made the leap necessary to obtain the acceptance of maps as primary historical source material containing information of value for more than its artistic worth. In line with the earlier underestimation of the value of cartographic material – an evaluation based on an inability to read or decipher the cartographic symbols used before the nineteenth century – it has not proved possible, to date, to make a systematic record of the information contained in such maps. The unquestionable existence of errors and their repetition through the equally familiar tactic of copying have largely prevented the identification of reliable information. It seems likely, however, that the comparative approach will give such information its true substance. Research has shown that this cartographic material was valuable to users in its own time, and therefore the information it contained had to be accurate.
The information was addressed to sailors, soldiers, scholars and, of course, the rulers of the day, as eloquently revealed by the emphasis always placed on fortresses and harbors. As a result of the changes that have come about and the damage the settlements of the Aegean have sustained, the urban forms of the fifteenth or sixteenth century have rarely survived. Harbor installations, breakwaters, the sea-gates to fortresses, towns, lighthouses and the ratios of empty to built space along the seafronts of the towns, in particular, have all disappeared beneath the extensions of the nineteenth and twentieth centuries. Research, however, has demonstrated that the symbols of the isolarii, at first sight incomprehensible and abstractive, actually conceal, in most cases, a lost and unknown picture of the Aegean ports of the fifteenth and sixteenth centuries.

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NOTES

1. National Technical University of Athens, Greece; research team D. Karydis, G. Tolias, Y. Triantafyllidou-Baladié, and N. Belavilas; consultants C. Koumarianou and T. Strongilos.

2. “And off the coast of the island, on a rock, is a fortress called Strongylo, from which the town later took its name.” See Cristoforo Buondelmonti, map of ‘Naxos-Nixia,’ in Liber Insularum Archipelagi, compiled in Rhodes ca. 1420-1430 and published as Christophr. Bondelmonti florentini, Librum insularum Archipelagi, e codicibus parisinis nunc primum edidit, prefaetione et annotatione instruxit Gabr. Rud. Ludovicus de Sinner (Lipsiae et Berolini: apud G. Reimer, 1824).


4. Even Choiseul-Gouffier, depicting Naxos in the late eighteenth century, makes it quite clear that the walls of the outermost buildings stood at some distance from the sea.


9. Epameinondas Stamatiadis dates the Sarakini Tower at Tighani in 1577. See Σαμιακά ήτοι Ιστορία της νήσου Σάμου από των πανάρχαιων χρόνων μέχρι των καθηματάς (Samos: Press of the Principality, 1886), 4: 72.