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Mediterranean islands in Tabula Peutingeriana

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Summary

Tabula Peutingeriana is considered one of the most important cartographic representations of roman itineraria and an important source for the history of late roman antiquity, especially concerning the road networks implying the mobility pattern in the roman era. In this paper we visit the “peutingerian” Mediterranean islands of Balearic, Corsica and Sardinia, Sicily, Djerba, Crete and Cyprus, as depicted in Tabula Peutingeriana, in terms of modern digital image technologies, analyzing the relevance of the road networks in association to each island’ toponyms in comparison to modern cartographic counterparts (indicating thus coincidences and differences between “peutingerian” and “actual” road distances) and comparing the relative islands’ sizes, concerning the surface and scale, concluding in the portrayal and evaluation of the Mediterranean islands road networks during late antiquity.

Introduction

This project is the experimental extension of the work that has been done for the island of Crete two years ago, with very interesting conclusions about the significance of the island during the Roman period. In the first place, we examined through digital analysis the island of Crete in Tabula Peutingeriana, with emphasis given to the analysis of its road network. In a second step of the research, as this first step gave us enough evidences of the island’s significance in roman era, we are interested to examine and compare the rest Mediterranean islands, especially the toponyms and the road networks on them, comparatively to Crete. The project is based in one-by-one image of Tabula Peutingeriana, through Euratlas’ website, based on the original manuscript of Austrian National Library and accompanied by a interactive map¹ and a transcription of some toponyms in each part, and to the one-by one image of the Konrad Miller facsimile, d. 1887/88, available at the website of Bibliotheca Augustana², as a check-point for the reading of the manuscript (fig.1).

Tabula Peutingeriana

Tabula Peutingeriana (figure 2) is the most representative piece of cartography of the Roman era. A sample of roman itineraria scripta, a cartographic type of geographic and military character, which was popular in ancient Rome, it depicts thoroughly the ancient roman road network from the Iberian Peninsula until Middle East, surrounding the Mediterranean Sea. According to actual cartographic terminology, Tabula Peutingeriana is a typical example of a thematic road map preserving mainly the topology of geographic continuity rather than the conventional cartographic representation. The strongly deformed shape, mainly in terms of latitude, does not preserve any rational cartographic scale or orientation in any of Tabula’s twelve sheets. Despite its overall deformation, the distances, at least

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¹ Original manuscript (1265?) in digital form, Euratlas, <http://www.euratlas.net/cartogra/peutinger/>

² Konrad Miller facsimile, 1887/88, Bibliotheca Augustana, http://www.hs-augsburg.de/~Harsch/Chronologia/Lspost03/Tabula/tab_pe00.html

between the main cities, are defined with sufficient accuracy³. The deformations of the coastline course and of the geoshapes in Tabula makes today its reading unfamiliar and complicated for the non-experts, but the thematic information contained is considered of great significance, mostly for the depiction and the semantics of the ancient road networks in late roman antiquity.

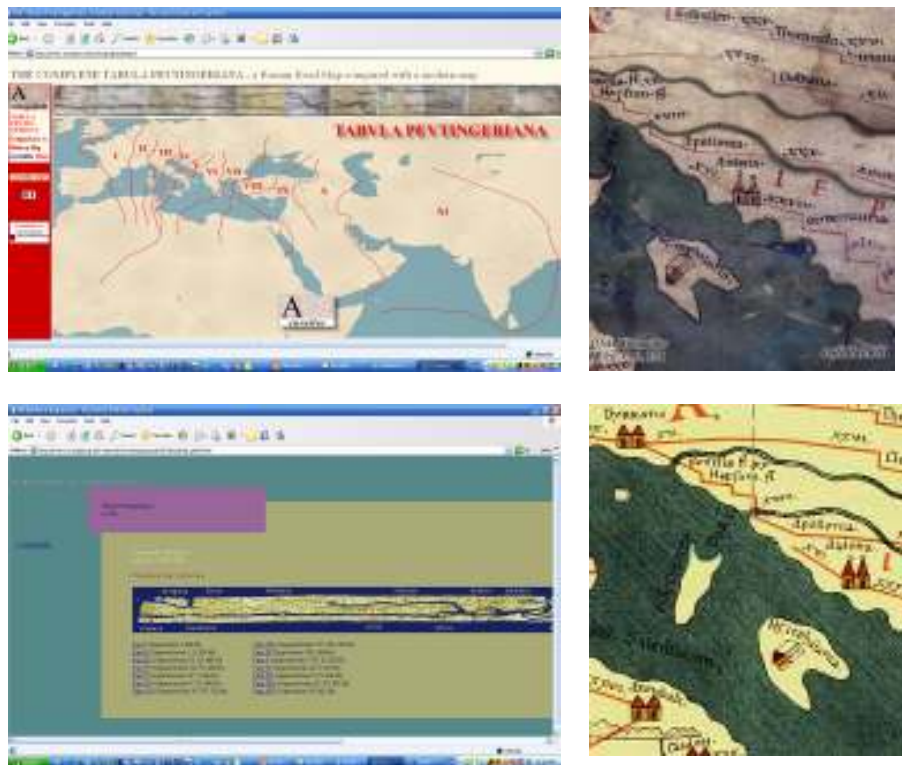


Figure 1. Tabula Peutingeriana in Euratlas' and Biblioteca Augustana's websites.

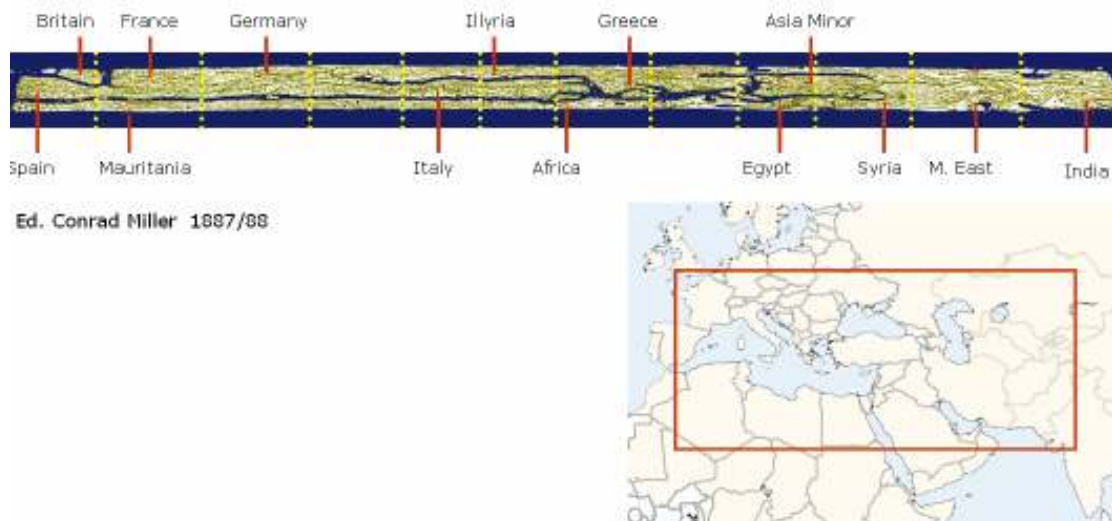


Figure 2. Tabula Peutingeriana.

Depicting in topological consistency the road network and offering travel information to its users (by showing the road network, the settlements, the staging posts, the partial distances, the cities of various

³ The map depicts the road network in the Roman Empire, almost 70.000 roman miles long which equals ca. 104.000 kms of roads length and sea routes. In addition, almost 300.000 toponyms are reported on map according the *cursus publicus*.

type, depending on their size and significance etc. –hundreds of functional place symbols, used with classified differentiation, are used for the depiction of all these features), the map proves its obvious utility value: showing to the traveler, in a schematic way, what lay ahead of him and how far.

Mediterranean Islands in Tabula Peutingeriana

The main Mediterranean islands that we are interested to see how are depicted in Tabula, from West to East, are Balearic islands, Corsica and Sardinia, Djerba, Sicily and Malta, the islands of Adriatic and Ionian Sea, Crete, the Aegean islands and Cyprus (figure 3). Even at the first sight, it is obvious that not all islands are depicted with the same care.

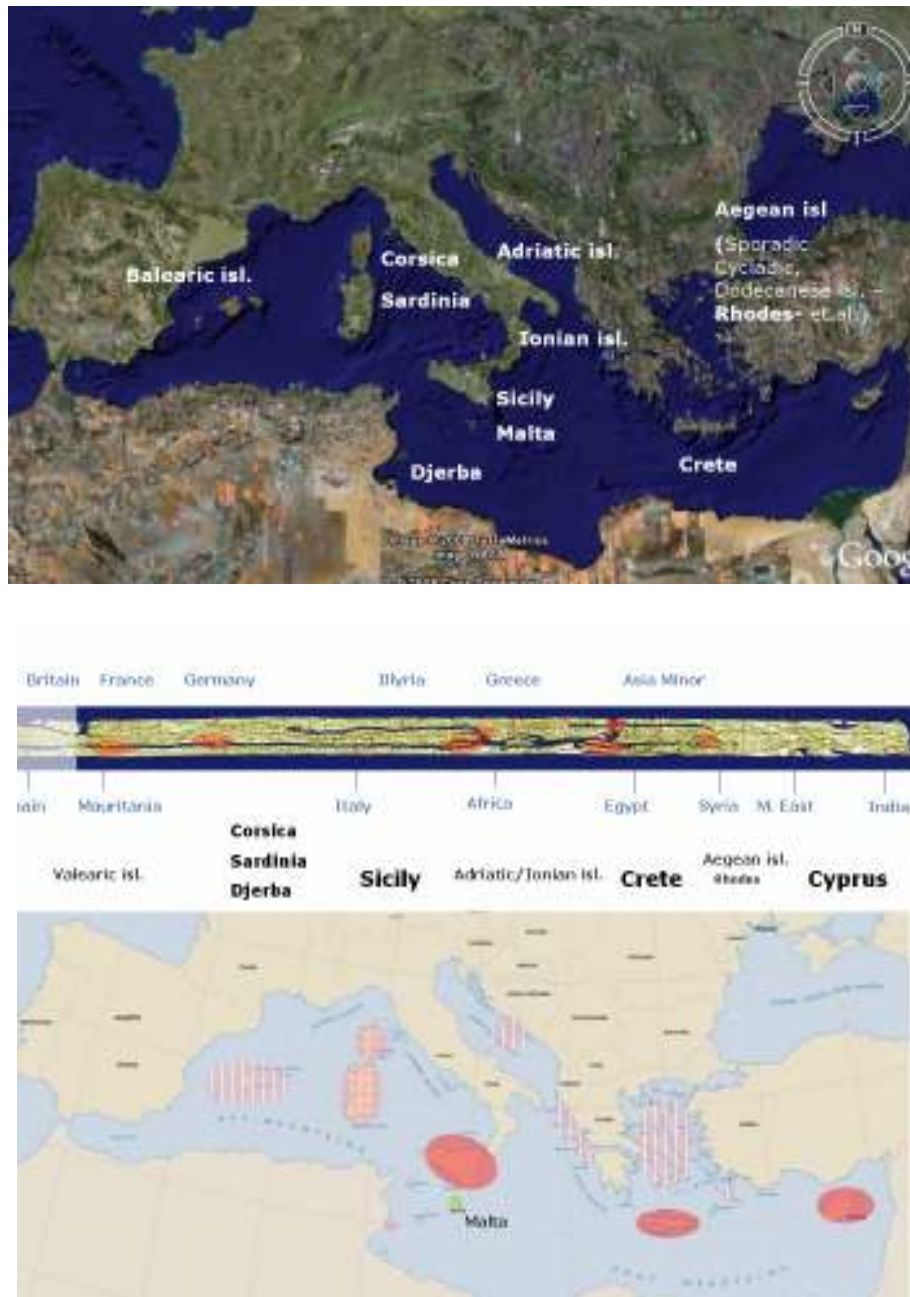


Figure 3. Mediterranean islands in Tabula Peutingeriana.

All over Mediterranean Sea, the cartographer’s choice was to refer in detail only three major islands: Sicily, Crete and Cyprus, with their cities, the road networks and other details. In islands of minor importance at the time, such as Corsica, Sardinia and Djerba we have some toponyms, while other

islands, not necessary the smallest ones, like Balearic, Adriatic, Ionian and Aegean islands, among them Rhodes, are just depicted with their names, without any other detail. We should note that there is no reference at all to Malta.

The “minor” islands: Balearic, Adriatic, Ioanian and Aegean

Balearic islands (fig. 4): We counter a conflict between our two sources: In Biblioteca Augustana’s facsimile, Balearic islands are depicted in the first, missing and reconstructed section (b), while in Euratlas (a) Balearic are identified with 3 anonymous islands to the following section II. But, even to the reconstruction, (just like the Canary islands, Thule or Ibernia insula), Balearic islands are depicted only with their names, without any other detail.



Figure 4. Balearic islands.

In the following section (fig. 5), we have numerous little islands round Corsica and Sardinia (a), but it’s difficult to identify them, either because their names are difficult to read, either because there is no names at all –we still try to locate possible references. Following, in three sections, the islands in Adriation Sea (b), the Ionian islands, with their names and a symbol of town in Cephalonia (c), all with just their names and many of them anonymous, and the Aegean islands, some of them in red color, some difficult to be read, but most of them with their names. Rhodes is depicted relatively big in size, far away from the other islands of Aegean Sea.



a



b

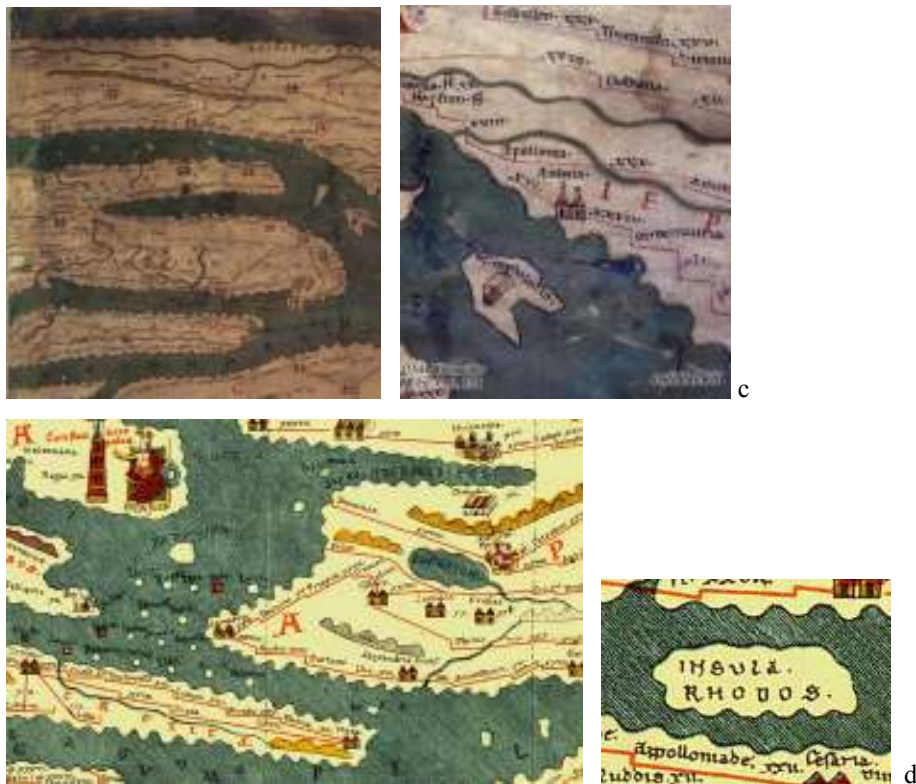


Figure 5. Other minor islands.

Major islands A: Corsica, Sardinia, Djerba

The first three of the major islands, Corsica, Sardinia and Djerba are depicted with some toponyms, without any road network or symbols of towns (fig. 6).



Figure 6. Corsica, Sardinia, Djerba.

The research is still open for the identification of the toponyms in Corsica and Sardinia (a), as for Djerba (b). The extreme deformation and disorientation of this islands, comparing to the modern map, is obvious.

Major islands B: Crete, Cyprus and Sicily



Figure 7. Crete.

At the time Tabula Peutingeriana was constructed, Crete (fig. 7) is a separate administrative district in Eastern Roman Empire, with its centre in Gortys, the modern Herakleion. The map depicts the road network with a red curved line (without any alteration of roads), with each intersection marking a staging point, a city or simply the distance corresponding to one day route. Four major and fourteen minor cities are placed in Crete. Despite the deformation, it is not difficult to identify some geographical features: Without giving any names, we recognize two symbols of mountains, the first at the top of a gulf (Ormos Mesaras) in the South and the second in the East part of the island (fig. 7, 8).

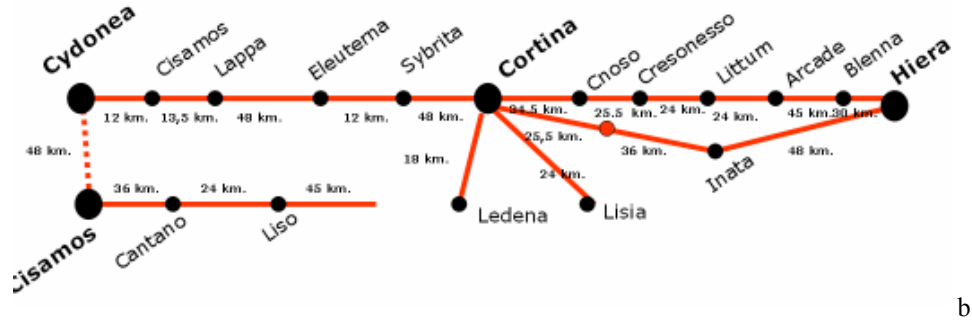
With its centre in Gortys, the road network of Crete according to Tabula Peutingeriana is developed radially in the following pattern (fig. 8b, 9):

1. A road in the East, connecting Gortys with Ierapytna, through Knosos, Hersonisos, Lyttos, Arcades and Bienna.
2. A second road connecting Gortys with Ierapytna, through Inatos. It appears that it was not rare to include two or more alternative routes between a pair of points, with or without indication for the reasons.
3. A road in the North-West, connecting Gortys with Cydonia and the port of Cisamos, through Sybrita, Eleftherna, Lappa and Cisamos.
- 4-5. Two independent roads, connecting Gortys with Lentas and Lasaiia (We should mention here that the position of the two ports is reverted than their identification from the archaeological research).
6. A road appearing not to be connected with the rest of the network, in the West, connecting Cisamos with Lisos through Cantanos (The road ends at an anonymous station, giving the distance from Lisos). Although it seems in the Tabula Peutingeriana that this road develops at the South-West, it is obvious in the modern map that it develops along the West coast of the island.
7. Finally, without depicting any road, the distance between Cydonia (Chania) and Cisamos (Kasteli) is indicated 32 roman miles, ca. 48 km, whilst this distance today is 39 km along the motorway). It is interesting to point out the deformed depiction of the West part of the island. In Tabula Peutingeriana the cities are set out in a way that Cisamos is collocated in the South West

extreme end of the island, while the archaeological research identifies it with modern Kasteli, at the North West extreme point.



a



b

Figure 8. All nineteen Cretan cities reported in Tabula Peutingeriana, four major and fourteen minor, are identified thanks to archeological evidence related to known cities of late antiquity, more or less important. Thirteen of them remain the same today (a). The *cursus publicus* connecting the sites, as represented in *T.P.*, is scaled with the relevant partial distances in Roman miles (b).



Figure 9. Crete's road networks.

The *Island* of Cyprus (fig. 9), third in area among the five larger islands of the Mediterranean, is laying in a critical area for the major historic routes in East Mediterranean. Together with Crete, Cyprus enjoyed almost a privileged treatment by the early mapmakers, obviously because of their nodal placement along the sea routes.

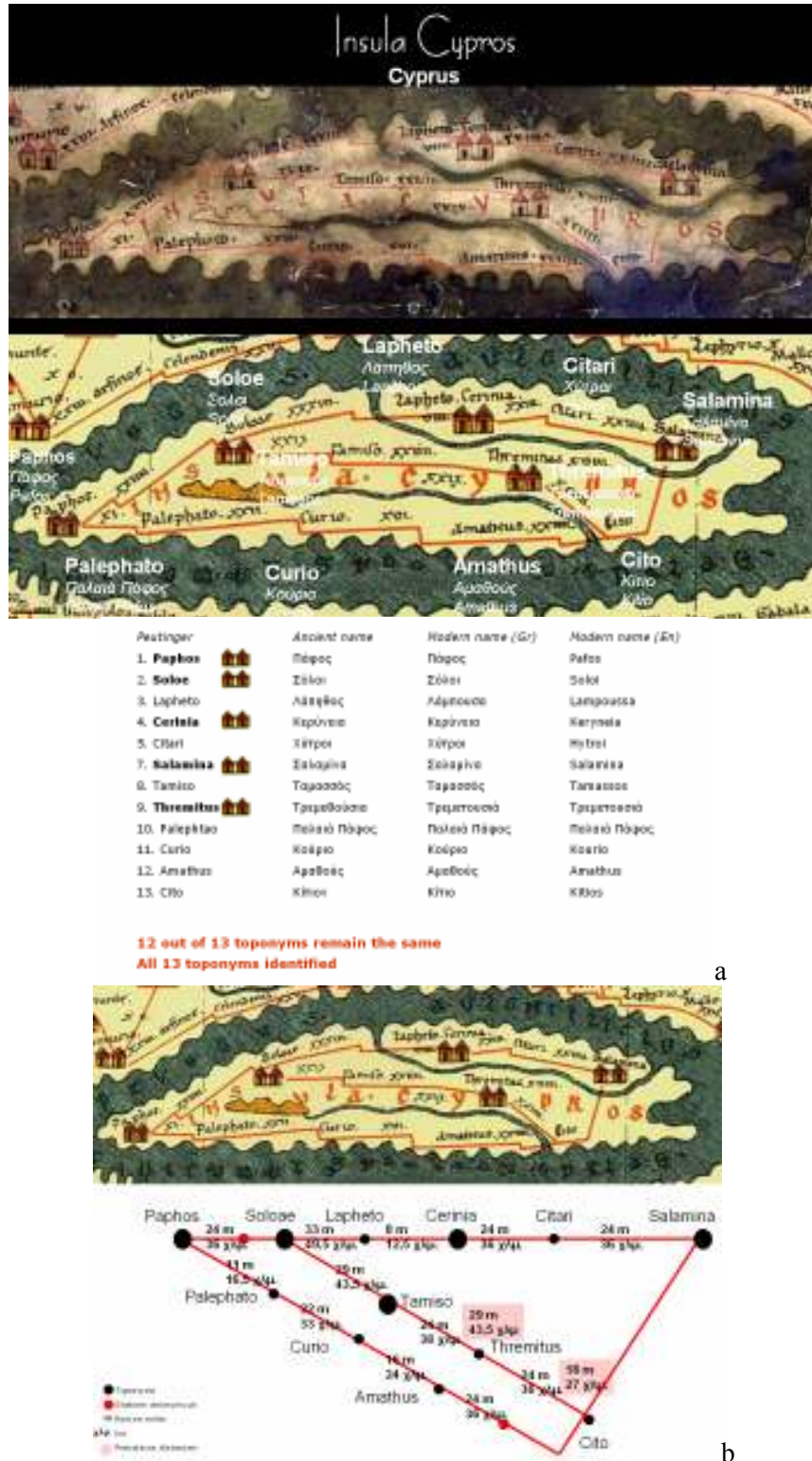


Figure 9. Twelve towns are mentioned on Cyprus, all nodal points of the island’s Roman road system, among which five are marked by a proper symbol as equally important (Paphos, Soloe, Cerinia, Salamina, Thremitus). All of them are identified through the archaeological research and 12 of them retain the initial name (a). Here the road network is developed differently, with many centres and only two “double” precarious distances, between Tamisio and Thremitus (b).

Cyprus' road network, simulated on a modern map according to archaeological evidence, is developed in three parts (fig. 10):

- i. The first from Paphos to Salamina through Soloe, Lampoussa, Keryneia and Hytroi
- ii. The second, following the south coastline, from Paphos to Salamina through Palaia Pafos, Kourio, Amathous and Kitio
- iii. And the third road, starting from Soloe crosses the island, passing through Tamassos and Tremetoussia.



Figure 10. Cyprus' roadnetwork

Last but not least, Sicily (fig. 11), the first in size among the Mediterranean islands, close to Rome and nearly to the center of the Mediterranean Sea. It's the only island where we have names of rivers, plus 23 towns, 5 of them with the symbol of major city and 1 with the symbol of bathes.



Figure 11. Sicily in Tabula Peutingeriana.

Peutinger	Ancient name	Modern name (It)	Ancient name (Gr)
1. Siracusa	Syracusae	Syracuse	Συρακοῦσαι
2. Thermis	Thermae	Termini Imerese	Θέρμαι
3. Panormo	Panormus	Palermo	Πάνορμος
4. Solunto	Solunto	Solanto	Σόλοι
5. Agrigento	Agrigentum	Agrigento	Ἀκράγας
6. Dejanis	Drepanum	Trapani	Δρέπανον
7. Lilybeo	Lilybaeum	Marsala	-
8. Segesta	Segeste	Calatafimi-Segesta	Σέγεστα
9. Cephalodo	Cephaloedium	Cefalu	Κεφαλοῖδιον
10. Hible	Megara Hyblaea	Augusta	Μέγαρα Ὑβλαία
	Hybla Gereatis	Paterno	Ὑβλα Γερεάτις
	Hybla Heraea	Ragusa	Ὑβλα Ἡραία
11. Halesa	Halesa	Halesa, Alesia	Ἥλαισσα
12. Calacte	Calacte	Caronia	Καλάκτα, Καλή Ακτή
13. Aga(u)lino, Agatino	Agathyma	Capo d'Orlando	Ἀγαθύμνα
14. Tauromenio	Tauromenium	Taormina	Ταυρομένιο
15. Tindareo	Tyndaris, Tyndarion	Tindari	Τυνδαρίς, Τυνδάριον
16. Messana	Messene	Massina	Μεσσηνή
17. Enna	Enna	Enna	Ἔννα
18. Aetna	Aetna	Paterno	Ἄιτνη
19. Centurippa	Centuripae	Centuripe/Centuripe	Κεντούριπαι
20. Aguria	Agurium	San Filippo d'Argiria/Agira	Ἀγύριον
21. Agris	Acrae	Palazzola Acreida	Ἄκραι
	Acis	Acireale	Ἄκις
22. Ca(thuis)iana	?	?	?
23. Aquas Labodes	Thermae Selinuntiae or Aquae Labodes	Sciacca	Θέρμαι
24. Himera fl.	Himera	Fiume Grande	Ἰμέρας
25. Fl. H(i)ra(r)ix	?	?	?
26. Fl. Simentus	Simoethus	Simeta	Σιμοῦθος
27. ?	Catana?	Catana?	Κατάνη?

9 out of 27 toponyms remain the same

8 out of 27 toponyms are coming from the ancient name

5 out of 27 toponyms are not identified

a



b

Figure 12. Not all of Sicily's 27 towns are identified with modern toponyms (a). For example, for Hible and Agris we have more than one alternative identifications. Some of the toponyms are difficult to read, one of the symbols of major cities is not accompanied with a toponym –it could be Catana, an important city of this era, connected with Syracuse. After all, 9 out of 27 toponyms remain the same, 8 are coming from the ancient name, and 5 toponyms are not identified.

Again by simulating the network on a modern map according to archaeological evidence, the road network is developed this way (fig. 13):

1. Starting from Termini Imerese /Thermis, to Messina through Cefalu/ Cefaledo, Halesa, Caronea / Calacte, Capo d'Orlando and Tindari/ Tindareo
2. From Termini Imerese to Trapani through Solanto, Palermo, Segeste-and here.
3. From Termini Imerese to Paterno through Enna, Agira, Centuripe and
4. From Trapani to Marsala and Sciacca. After more than one alternatives on the identification of the cities leave us with questions and it is obvious that the research here still remains open, waiting for help from the archaeological research.

The schedule help us to locate some dark points, like missing distances (between Thermis and Solunto for example), the placement of Tauromenion, the modern Taormina, before Tyndaris, while in the reality it is at the East coast etc.



Figure 13. Sicily's road network

Comparisons: Toponyms, relevant position, road networks

As we saw before, the map depicts the road network with a red curved line (without any alteration of roads), with each intersection marking a staging point, a city or simply the distance corresponding to one day route. The distances between the stations are indicated in roman miles, in Latin writing. Before making any conversion in kilometres, we should keep in mind that we are dealing with a disaccord between the written sources and the archaeological evidence: while according the littarary tradition 1 roman mile equals 1,48 km, the archaeological research and the identification of known distances give us the equivalence of 1 roman mile to 1,52 km. So, if we write down all the evidences we have about the distances and their equivalent, we have a file for each island, with the equivalent of roman miles in kilometers and the corresponding distance through the modern road network (fig. 14).

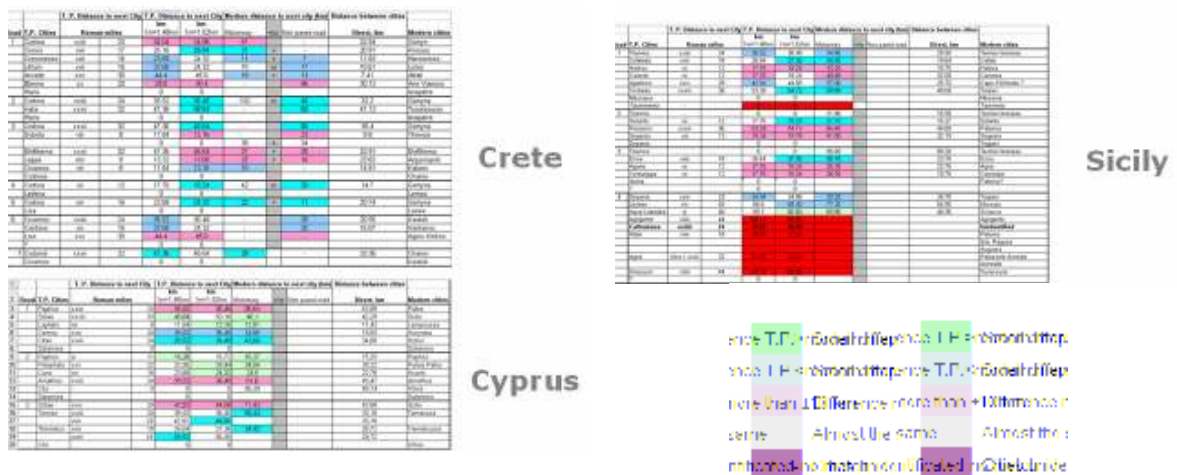


Figure 14.

Accepting legitimate approximations in the comparison of distances, given in *T.P.* versus the actual values (*T.P.* vs *a.v.*) impressive results are obtained, like e.g. :

- i. The coincidence of the distances (see Cyprus, green color): (In some cases, where the distance is not great and the geomorphology leaves no space for alternative routes, we have an almost accurate coincidence).

ii. The vicinity of distance differences, close to 10%, like the one noted with blue color (Crete, Cyprus, Socily). It is interesting although that the distances of Tabula Peutingeriana's roads lead us to search and find in most cases modern non paved roads (of approximate same length), while the modern motorways follow other directions: only a small part of the ancient road network is identified with motorways, in most cases it seems that the ancient roadnetwork followed roads still existing, but still not paved.

iii. Third, some gross differences, noted with pink color (Crete).

iv. And four, the cases wher we lack of evidences, noted with red color (Sicily).

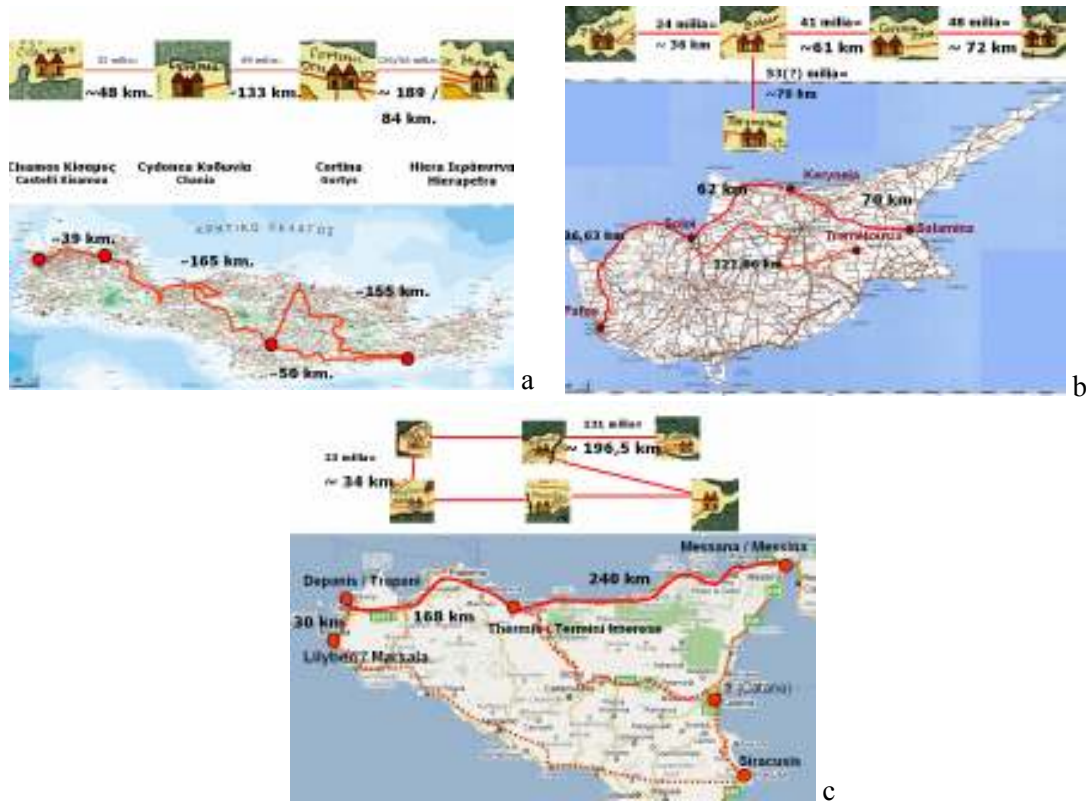


Figure 15. With the measurements provided, we can have some idea about larger distances, for example about the distances between the major cities. Here, in Crete we take a variation of +5-10% (a), while in Cyprus, at the relevant schedule, there is impressive similarities and differences (b) and in Sicily, just because there is this identified cities, we could'nt have more than 2 comparisons, because we are missing parts of the routes (c).

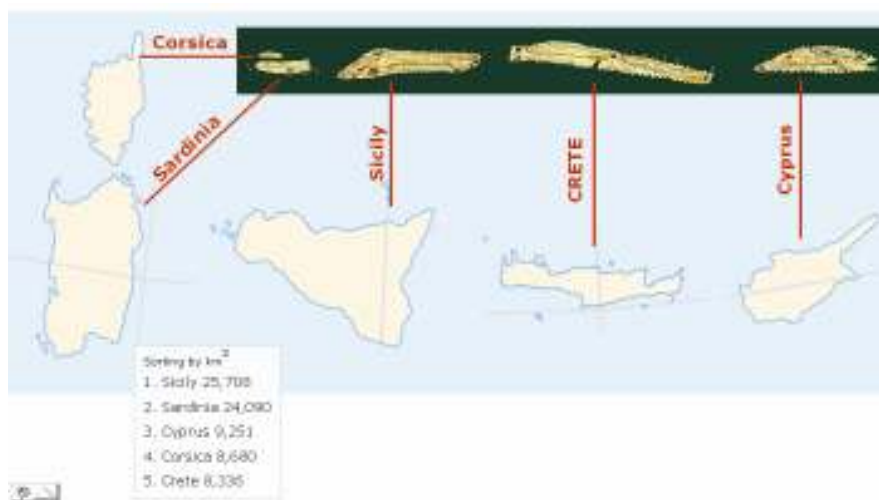


Figure 16. Mediterranean islands' area in km².

Which bring us to the matter of the surface and scale (figure 16, 17): The relative size of the Mediterranean islands is really impressive: while Crete is the less extended between the five major Mediterranean islands, after Sicily, Sardinia, Cyprus and Corsica, it is also depicted much bigger than the other islands. It seems that Tabula's cartographer chooses to focus on Crete, while at the same time recognises that in the other islands there are more places worth to refer, as we saw before. Moreover, Corsica and Sardinia, whereas bigger in area than Crete, are depicted much smaller in Tabula, almost without any other characteristic except their name, without any road network at all. It is obvious that the cartographer's choice reflects the minor importance of these two islands in travelling and sea routing at that time.

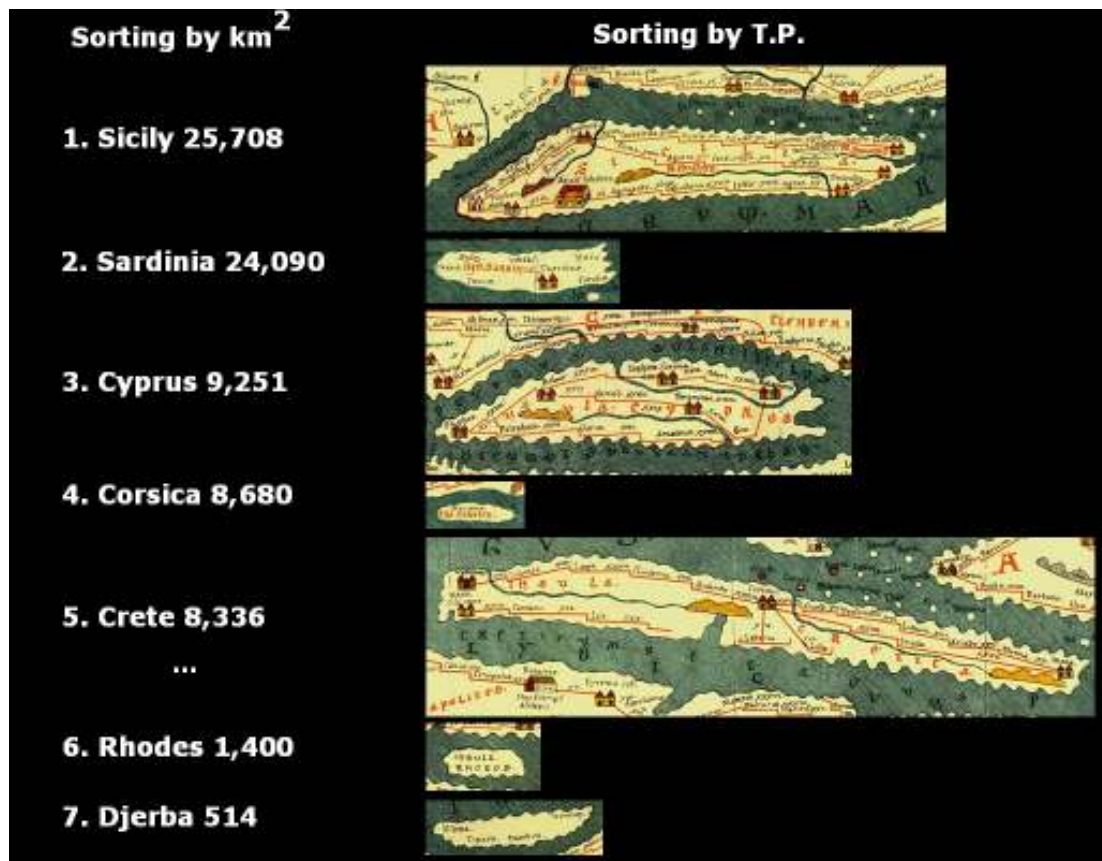


Figure 17. Mediterranean islands' relative area in Tabula Peutingeriana.

After the comparison in number of toponyms, symbols etc, we can see at the qualitative diagrams (fig. 18, 19), to the left, the islands classified according to the real surface ((blue) and the ratio of the Peutingerian toponyms with respect to the real surface (red) and to the right the classification according the Peutingeriana island surface (blue) and the ratio of the Peutingerian toponyms with respect to the peutingeria surface (red), showing how the perception of the islands changes according the image used.

In conclusion: Introducing literary sources, archaeological and modern evidence in the study of historical maps, applying modern digital technologies and a relevant methodology, one could draw useful information about the importance of the islands at the time the Tabula Peutingeriana was constructed (4th century), their relative significance, the function of the road networks and the unveiling of its operability, the identification of significant cities, in relation to the road network, and their classification according to their importance in the network (1st level - 2nd level - simple stations), the relative distances between cities, the identification and comparison with modern networks, the portrayal and evaluation of the Mediterranean islands road networks during late antiquity.

It looks that the comparative study of the mediterranean islands in Tabula Peutingeriana, despite the “dark aspects”, confirms the initial understanding that Crete was island documented with moere care in Tabula, which reflects the importance of this island to the Roman routes in the sea. And this is a leading point for future work, in cooperation with archaeological research.

	Crete	Cyprus	Sicily	Corica	Sardinia	Djerba	Rhodes
Major cities (symbols)	4	5	6				
Minor cities	14	8	18	1	1	4	
Baths	-	-	1				
Rivers, Mountains (symbols)	4	3	0				
Rivers, Mountains (toponyms)	-	-	3				
Toponyms (total)	18	13	26+1	1	1	4	1
Identified toponyms	100%	100%	81%				
Non-identified toponyms	0%	0%	4				
"Dark" road network	Yes	Yes	Yes				
Toponyms/1000 km ²	2.2	1.4	1	0.1	0.2	0.6	0.7



Figure 18.



Figure 19.

References

- Boutoura C., K. Papadopoulos, E. Livieratos 1999. A tourist and school map of Crete, Thessaloniki, Dept. CPC, Fac. Surv. Eng., Aristotle University “Cultural Map of Greece” [in Greek]. Odysseus, Hellenic Ministry of Culture. Available at: <http://www.culture.gr/>
- Drakoulis, D., 2006. The study of late antique cartography through web based sources. In: E. Livieratos (ed.) Proceedings of the First International Workshop Digital Approaches to Cartographic Heritage, Thessaloniki: National Map Library: 41-50. Also in *e-Perimtron*, Vol. 2, No. 3, 160-172.
- Google Earth, Virtual globe programme, built time 13 Nov. 2007 (last visited 29/1/2008)
- Kilometric and satellite map of Crece, travelmap. Available at: <http://travelmap.korinthorama.gr/>
- Livieratos, E., 1998. *A journey in Cartography and Maps. 25 centuries from Ionians to Ptolemy and Righas*. Thessaloniki: National Centre for Maps and Cartographic Heritage– National Map Library. Revised edition E. Livieratos 2007, *25 centuries of Cartography and Maps. A journey from the Ionians to ptolemy and Righas*. [in Greek] Thessaloniki: Ziti. (in Greek)
- Livieratos, E., 2008. *Cyprus on historic maps. Placement, shape and orientation, from a digital point of view*. Bank of Cyprus Cultural Foundation: Nicosia.
- e-Perimtron, Vol. 2, No. 4, Autumn 2007 [245-260] www.e-perimtron.org | ISSN 1790-3769 260
- Math Forum <http://mathforum.org/library/drmath/view/61126.html>
- Municipality of Chania, the official website. Available at: <http://www.cChania.gr/>
- “National Monuments Archive”. Nikiphoros Fokas, 13th Εφορεία of Byzantine antiquities, Rethymno. Available at: http://www.ics.forth.gr/isl/yppo_site/fokas/
- Pazarli M., E. Livieratos, C. Boutoura (2008). Road network of Crete in Tabula Peutingeriana, *e-Perimtron*, Vol. 2, No. 4, 245-260.
- Russ Rowlett, “How Many? A Dictionary of Units of Measurement”. Available at: <http://www.unc.edu/~rowlett/units/dictM.html#mile>
- Simantoni-Bournia. & Mendoni L., 2006. Arcaeological Atlas of Aegean Sea. Ministry of Aegean Sea, University of Athens (in Greek). Available at: <http://www.ypai.gr/atlas/default.asp>
- Tabula Peutingeriana (Alphabetical index), http://soltdm.com/sources/mss/tp/tp_0.htm , at Sorin Olteanu's LTDM Project, <http://soltdm.com/index.htm>
- Tabula Peutingeriana, Manuscriptum originale*, ca. 1200. In Bibliotheca Augustana. Available at http://www.fh-augsburg.de/~harsch/Chronologia/Lspost03/Tabula/tab_manu.html
- Talbert, R. A. J. (2007). “Author, Audience and the Roman Empire in the Antonine Itinerary”, in R. Haensch, J. Heinrichs (eds) *Herrschen und Werwalten. Der Alltag der roemischen Administration in der Hohen Kaiserzeit*, Weimar, Wien: Boehlau Verlag Koeln: 256-270.
- Talbert, R. A. J. (2007). “A Forgotten Masterpiece of Cartography for Roman Historians: Pierre Lapie’s *Orbis Romanus ad Illustranda Itineraria* (1845)”, in: *A tribute to the man from Northumberland*, H. M. Schellenberg, V. E. Hirschmann, A. Kriekhaus (Eds). Heidelberg- Duesseldorf: 180-190.
- Talbert, R. J. A. (2007). Konrad Miller, Roman Cartography, and the Lost Western End of the Peutinger Map, in: *Historische Geographie der Alten Welt*, Grundlagen, Ertaege, Perspektiven. Zuerich-New York: Georg Olms Verlag Hildesheim: 333-366.

Talbert, Richard J. A., 1947-, Bagnall, Roger S., Barrington Atlas of the Greek and Roman World, Princeton University Press, 2000

Talbert, R. (2007). Peutinger's Roman Map: the Physical Landscape Framework, in: *Wahrnehmung und Erfassung geographischer Räumlichkeiten in der Antike*, M. Rathmann (Ed.). Mainz am Rhein: Verlag Philipp von Zabern: 221-230.

The Catholic Encyclopedia, <http://www.newadvent.org/cathen/06570c.htm>

Valentini M. (ed.), The complete map of the Roman roads, http://www.romansites.com/carta_dell'impero.htm . In The Roman Roads. Available at: <http://www.romansites.com/index.htm>

University of Crete, Faculty of Mathematics, official website. Available at: <http://www.math.uoc.gr:1080/syndesmoi/topikou/crete-map-gif.gif>

Vasilakis, A., 2000. *All 147 cities in ancient Crete* (in Greek). Herakleion: Kairatos. Available at: <http://www.kairatos.com.gr/cities.htm>