

The Kitab-1 Bahriye “Book of Navigation” of Piri Reis

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Key words: Piri Reis, Kitab-1 Bahriye, The Piri Reis Map of 1513, Ottoman chart

SUMMARY

Piri Reis was a celebrated navigator and explorer of the 16th century. He very keenly observed the places he visited and drawing upon his personal notes as well as the information and documents he obtained from others, he produced very important cartographic maps particularly for people engaged in navigation. He collected most of these maps in his work titled Kitab-1 Bahriye [*Book of Navigation*]. The most important feature of this work is that it comprises numerous maps and geographical information on the coasts of the Mediterranean Sea. This feature has allowed users instant access to substantial information which are not referred or impossible to refer in maps. As a very critical manuscript, Kitab-1 Bahriye has a limited number of original copies preserved in various museums. Yet, scholarly studies on Kitab-1 Bahriye are still scarce. The present study aims to contribute to the promotion of the work and help initiate various academic researches.

Piri Reis’in Kitab-1 Bahriye’si “Denizcilik Kitabı”

ÖZET

Piri Reis 16. yüzyılda yaşamış ünlü bir denizci ve araştırmacıdır. Piri Reis, gezdiği yerleri çok iyi gözlemlemiş ve gerek kendi tuttuğu notlar ve gerekse diğer kişilerden aldığı bilgi ve belgelerden yararlanarak özellikle denizcilikle uğraşanlar için çok önemli kartografik haritalar hazırlamıştır. Bu haritaların birçoğunu Kitab-1 Bahriye adlı eserinde toplamıştır. Bu eserin en büyük özelliği, Akdeniz kıyılarına ait çok sayıda harita ve coğrafi bilgiyi içermesidir. Bu özellik, haritayı kullanan kişinin, haritada sözü edilmeyen veya söz edilmesi mümkün olmayan pek çok bilgiye anında ulaşmasını sağlamıştır. Kitab-1 Bahriye çok önemli bir yazma eser olup çok az sayıdaki orijinaleri değişik müzelerde korunmaktadır. Ancak, Kitab-1 Bahriye ile ilgili bilimsel çalışmalar yeterli değildir. Bu çalışmanın amacı, eserin tanıtımına katkıda bulunmak ve farklı bilimsel araştırmaların başlamasına yardımcı olmaktır.

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1. INTRODUCTION

Piri Reis is a famous Turkish navigator, a shipmaster, a geographer and cartographer as well as a genius observer and researcher. In the 16th century, at a time when the Ottoman Empire was at the peak of its military and political power, he started his career as a navigator at an early age with his uncle Kemal Reis, a famous commander of the Ottoman navy, into whose service Piri Reis himself would also be taken (Afetinan, 1992). He spent most of his life in seas, especially in the Mediterranean. Carefully observing the places he visited and combining his observations with his experience and skills in cartography (McIntosh, 2000), Piri Reis produced his First World Map of 1513 (Figure 1), depicting certain parts of West Africa, Central and Eastern America, and his Second World Map of 1528 (Figure 2), representing the eastern coasts of North America, both of which are the most accurate maps of his time (Yerci, 1989) and masterpieces of cartography. Figure 1 and Figure 2 present the surviving fragments of these maps which were originally drawn on gazelle skin.



Figure 1. Piri Reis’s First World Map (Topkapi Palace Museum - Istanbul)

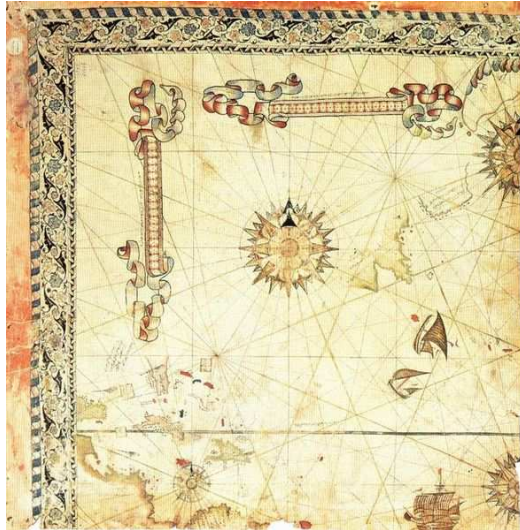


Figure 2. Piri Reis's Second World Map (Topkapi Palace Museum - Istanbul)

Apart from the world maps, another important work by Piri Reis is his *Kitab-ı Bahriye*, which he created drawing upon his career-long observations as well as the reference works he collected (Figure 3). Produced based on scientific principles and for the use of military and civil users, *Kitab-ı Bahriye* is not only an atlas containing information on the geographical, economic and social aspects of almost all coasts of the Mediterranean, but also a literary work incorporating poems intended to describe the geographical themes as well as textual information pertaining to each particular mapped region. Completing his work in the year 1526, Piri Reis presented it to Suleiman the Magnificent, Sultan of the Ottoman Empire, and earned his praise. But unfortunately, due to political rumours, Piri Reis, the author of all these splendid works, was executed upon the order of Suleiman the Magnificent, whose favour he had previously enjoyed.



Figure 3. An excerpt from *Kitab-ı Bahriye* (Topkapi Palace Museum - Istanbul)

2. THE LIFE OF PIRI REIS

The birth date of Piri Reis is not definitely known. However, he is assumed to have been born around 1465-70 as he served as a shipmaster during the Battle of Modon, which took place between the Ottoman Empire and Venice in the year 1500, and must have been about 30-35 years of age to serve in this rank. He was born in Gallipoli (Figure 4, Figure 5), and his original name was Muhiddin Piri. *Piri* refers to an experienced man or master, and *Reis* is a local title conferred on shipmasters. It appears that the parents of Piri Reis died around 1480-81, the time when he started his career as a navigator. He provided some brief information about his own life in his works. For instance, writing the following note on the western margin of his First World Map of 1513, he provided information regarding his place of birth as well as his genealogy, and indicated the date of the map according to the Islamic calendar:

“This map was drawn by the poor man Piri, son of Haji Mehmed and the nephew of Kemal Reis, ‘may Allah have mercy on them both’, in the town of Gallipoli, in the month of Muharram of the year 919”

From 1480 to 1500, Piri Reis spent his career serving as a sailor in the ship of his uncle Kemal Reis; and from that year onwards until the death of his uncle in 1511, he served as the master of one of the ships under the command of the latter. Piri Reis knew well how to benefit from his uncle’s knowledge and experience of the sea and navigation, and became a skilled naval explorer improving his qualities as an observer and researcher. Following the death of his uncle, he returned to Gallipoli, where he dedicated much of his time to scholarly studies drawing upon every kind of information he had collected while sailing in the Mediterranean and the Aegean Sea. Until the year 1547, when he was appointed as the Captain of the Indian Fleet by Suleiman the Magnificent, the sultan of the time, he continued his studies on world maps and produced works such as *Kitab-ı Bahriye*. In 1550, he captured the Fortress of Muscat, which was then in the hands of the Portuguese, and then fought against the Portuguese navy, which he encountered during his advance to capture the Island and the Fortress of Hormuz. Although he succeeded in repulsing the Portuguese navy, his ships were also damaged and thus, he was forced to return to the Gulf of Basra for the repair and maintenance of his ships as well as for the recovery of his crew. In order to secure the booty captured, he left his ships in the Gulf and set sail for Egypt with three of his galleys, one of which sank on the way. Kubat Pasha, the Governor-General of Basra, did not assist in the repair and maintenance of Piri Reis’s navy, and also drove the ships away from Basra under the pretext of the indiscipline of the oarsmen. What is more, due to the machinations of Kubat Pasha, who had unjustly demanded a share from the booty but failed to obtain, as well as the political ambitions and unfavourable attitudes of Mehmed Pasha, the then-new Governor-General of Egypt, Piri Reis underwent a trial in 1554 under the charge that he failed to duly perform his services for the state, and was beheaded upon the order of Suleiman the Magnificent.



Figure 4. Gallipoli (≈222 km from above: www.googleearth.com)



Figure 5. Gallipoli (an excerpt from the 1521 edition of Kitab-ı Bahriye)

3. THE KITAB-I BAHRIYE

In its simplest definition, describing for navigators the islands and coasts of the Mediterranean and Aegean Sea, Kitab-ı Bahriye is one of the leading works of the science of geography for Ottoman and world history as well as historical cartography (Soucek, 1992).

In 1521, Piri Reis prepared the first edition of Kitab-ı Bahriye and offered it to the service of users. Charged with the duty of suppressing a disturbance which broke out in 1524 in Egypt, Grand Vizier Ibrahim Pasha benefited much from Piri Reis – whom he took into his service as a guide – and his work in seeking shelter from a storm they were caught during his sea voyage. Following his return from the campaign, he advised Piri Reis to elaborate on his work and present it to Suleiman the Magnificent, the Sultan of the time. Thereupon, Piri Reis revised his work, added the poetic chapter which included the geographical terms, increased the number of maps, and completing the work in 1526, presented it to the Sultan. Greatly appreciating the work, the Sultan accepted it to the library of the Palace.

24 original copies of the first edition of Kitab-ı Bahriye have survived, most of them found in various museums and libraries of Turkey, as well as in countries such as Italy, Germany, United Kingdom, France and the USA. Together with those preserved in USA, France and Kuwait, its final edition of 1526 has 11 original copies, 8 of which are again found in different museums and libraries of Turkey. The present study used the copy found in the Library of Afyon Kocatepe University, which was prepared by Turkey's Undersecretaries of Maritime Affairs drawing upon the original source found in the Topkapi Palace Museum.

In its organization, Kitab-ı Bahriye could be analyzed under four chapters. The first chapter is the prologue part, which opens with a *Basmala* (In the name of God, Most Gracious, Most Merciful), and in which the author gives thanks and praise to Prophet Muhammad, proceeds with presenting information about his own family genealogy and then praises and prays for the reigning Sultan (Figure 6).



Figure 6. The prologue part of Kitab-ı Bahriye

Right after the prologue, Piri Reis provides brief information about the creation of the work and explains the reason for writing the book as follows:

“Enjoying his matchless grandiose favour and with the aim to earn reputation and credit, the most competent persons of the world have so far offered presents on various branches of science to the august threshold and felicitous gate of His Majesty the Sultan, the Patron of the World. I, Piri Reis, the most humble son of Haji Muhammad, the brother of the late Kemal Reis, wrote with the same hope a book, as much as I can, on the science and art of navigation as a present to the heavenly gates of His Majesty the Sultan. So far nobody has left a fruitful work concerning these issues...”

The second chapter consists of verses which poetically treat the themes. Consisting of 1024 verses, this chapter is further divided into 50 parts which are called “sections” [fasl]. At the beginning of each section there is a title which summarizes the theme explained below, such as *“This chapter explains storms in the language of seaman, this chapter explains the*

name of the winds, this part pertains to the signs of the map". Each section poetically describes the related themes. For instance, in the section which explains the names of winds, the author describes compass as follows:

*If you ask me what a compass is
And in which job it is used
It is a round box covered with a glass
It has a piece of paper under the glass
...*

To give another example, in the section describing the signs on the map, the author says:

*Now listen to the properties of the map
That here we talked about
And gave its details
For you to understand
In it are such names
That you should come to see
The lines of the cities and castles are in red
While the uninhabited places are in black
...
As for the unseen rocks
They have long been represented with crosses
If the little islands are to be written
They are written as dots each showing one
...*

The poetic chapter closes with the part on Antilles which provides information concerning the discovery of the Americas. The third chapter is the prose, which again opens with an explanatory introduction indicating the reason for writing the chapter in question. This chapter consists of 207 different sections. The chapter is particularly important in that, besides the 226 maps it includes, it for the first time in world history presents on the maps and in their margins geographical information on the mapped regions (Goodrich, 2000; Loupis, 2000; Goodrich, 2004; Saricaoglu, 2004). In his *Kitab-ı Bahriye*, Piri Reis explains the reason as follows:

"...So far nobody has left a fruitful work concerning these issues. To this end, based on the accurate information I obtained together with the late Kemal Reis and other ghazis as well as on my personal observations, I investigated and exhaustively described the prosperous and ruined places, the harbours, the springs, the reefs and the shallow places along the shores and islands of the Mediterranean Sea. For it is not at all easy and possible to indicate in a map all the information contained here. Such information was provided in a nutshell..." (Ulkekul, 2004)

Proceeding in a systematic manner (Aegean Sea, Greece, Adriatic coasts (Novak et al., 2004;

Novak et al., 2005), Mediterranean shores of Italy, France, Spain, North Africa, Egypt, coasts of the Eastern Mediterranean, Cyprus, Mediterranean and Aegean coasts of Anatolia, Gulf of Saros), sections, and thus, the maps go around the entire coasts of the Mediterranean (Onder, 2002). This is illustrated in Kitab-ı Bahriye as follows:

“...Starting from the fortresses of Sultaniye and Kilitbahir around Gallipoli, we have described this sea stop by stop and again ended with these fortresses, completing the cycle ...” (Figure 7)

Kitab-ı Bahriye is a book of geography and an atlas of the Mediterranean. Besides the maps of the places he visited, Piri Reis also provides information about various subjects such as local ports, shore depths, possible anchoring points for vessels, vegetation, drinking water, wells, mineral resources, archaeology, climate, socio-economic structure, ethnic composition and religious beliefs. These are illustrated with certain examples listed below.

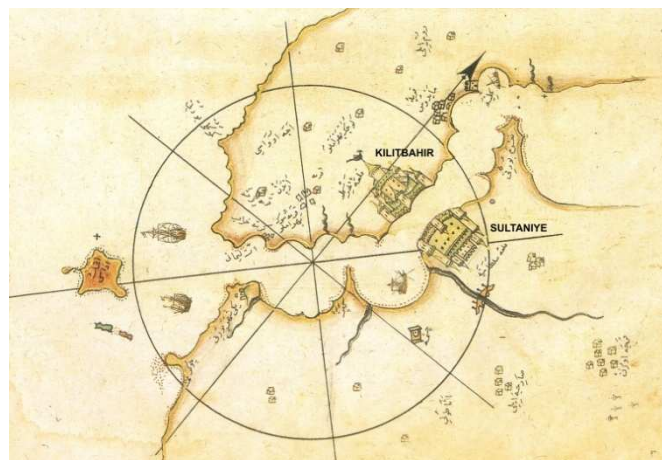


Figure 7. The fortresses of Sultaniye and Kilitbahir

The following section describes the island of Cyprus: (Figure 8, Figure 9)

“The island of Cyprus is not like other islands at all. Surrounded by Muslim lands which are the coasts of Anatolia, the coasts of Damascus, the coasts of Alexandria...It is about six hundred miles in circumference with plentiful mountains and flowing streams...Currently it is said to have four thousand villages. There is an abundance of every sort of fruit; plenty of oranges and sugar cane in every village. There are saltpans on the southern side of the island. Every year ships come here and load cargoes of salt...”

“Even though the island of Cyprus is a large one, there are but few places where a ship can lie on its northern coast. There is a castle called Girine Buferi on that side. There is tiny little harbour called Ala Kusiye before that castle...There is a bay which is an anchorage and where drinking water may also be found is on the other side of it. The cape of Bafa is ten miles to the south of that bay...There is another shoal on its seaward side about a hawser’s length away from the first one. It is three fathoms deep between the two shoals and like the

first shoal, the water over this one is also seventeen spans deep...”

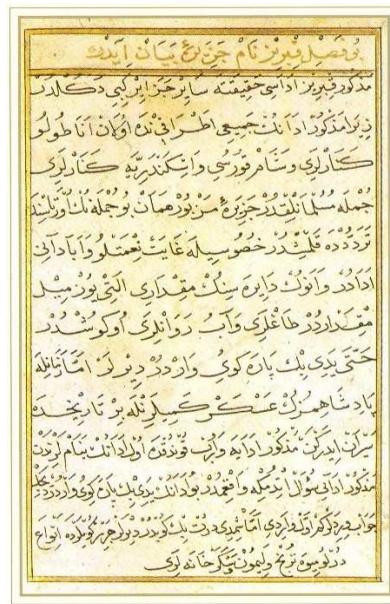


Figure 8. The introductory page of the section describing the island of Cyprus

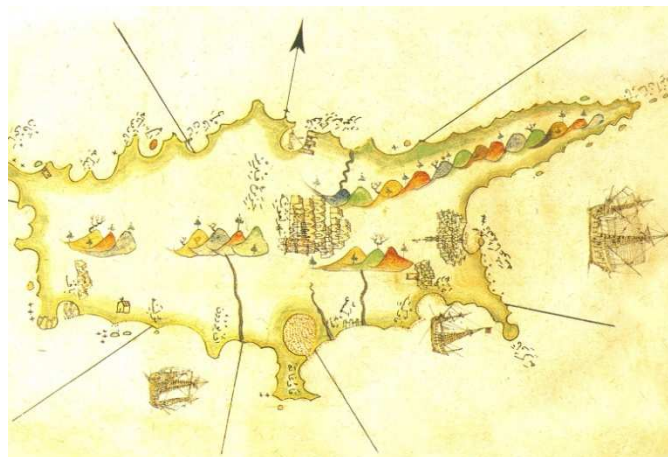


Figure 9. The island of Cyprus

The following section describes the island of Sicily: (Figure 10)

“Sicily is a mountainous, well-watered, and prosperous island. It has a circumference of seven hundred miles. It is said that this island is such a flourishing place that it has seven hundred castles of sizes small and great. Each year numerous ships take on cargoes of wheat from this island and there are numerous sugar plantations as well. Now, this island belongs to prince of Spain. If one shouted on a calm day, from this island it would be audible on the coast of Calabria. This place is called the strait of Messina and Messina is a big castle situated on a flat place on the island. In front of the castle is a nice, natural harbour

that measures four miles in circumference inside and varies in depth from thirty to forty fathoms. A chain is stretched across the mouth of this harbour and at either end of it there is a tower...

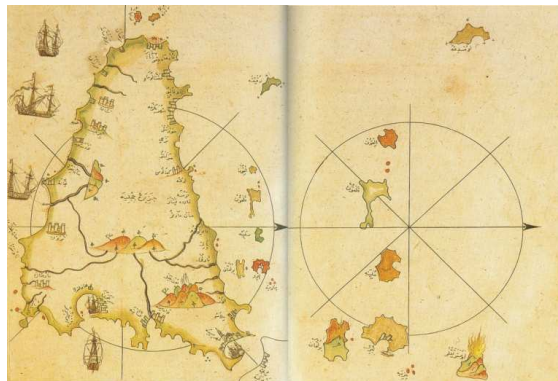


Figure 10. The island of Sicily

The following section describes the city of Venice: (Figure 11)

“The city of Venice is twelve miles in circumference which is within a lagoon that is everywhere filled with buildings rising on land and from out of the sea. The sea is shallow in some places and deep in others. They have driven piles on which they have built their city in the shallow places. Their motive for building it was this: before the city was constructed, this place was uninhabited but numerous infidel fishermen came from all parts to the place where the city now is. These fishermen erected weirs there and caught fish. Other fishermen from everywhere thronged to this place and caught fish as well when they began to prosper from the fishing. They drove piles into the shallow places that were mentioned before and built houses upon them. In shorter words, over a long time more and more of these infidels arrived here, and because of increasing in number they formed a city. Because there was now a city here the wise men decided that they needed to do something so that city would be honoured until the Judgment Day...”



Figure 11. The city of Venice

The following section describes the island of Sigirciklar [Rinia]: (Figure 12)

“...While building Saint Sofia, they used to cut marbles, from here Sığircık island. Now the places where they cut the marbles can be seen...”

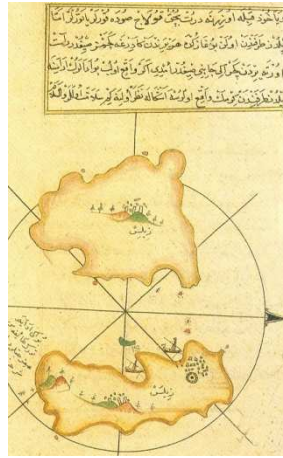


Figure 12. The island of Sigirciklar

The following section describes the island of Cirbe [Djerba]: (Figure 13)

“Cirbe is a low island. Approaching it from the sea, you first see the date palms because there are so many of them here. It is seventy two miles in circumferences. The island is so flourishing that there is not a single place that is uncultivated with gardens and vineyards. There is plentiful amount of olive oil and raisins here... In the tribe of Sheikh Yahya nobody performs his ritual prayers by following an imam. He will even perform the Friday prayers with an imam. He will not let the cup touch his lips while drinking water and in case he does, he will break up the cup. There is a single infidel cross over the door of every house...”

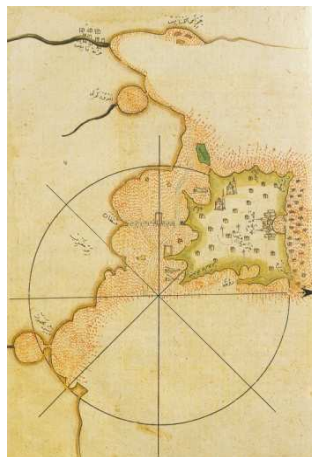


Figure 13. The island of Cirbe

The fourth chapter was composed in a poetic form and consists of 86 verses in a single section under the title of epilogue. Stating that his book came to the conclusion part, Piri Reis states explains in this chapter that he was happy for writing the book and it was his love for the Mediterranean Sea which motivated him to prepare such a work, and goes on with describing the historical process from the preparation of the book up until its presentation to the Sultan. Finally, he asks the readers and users of Kitab-ı Bahriye to bless for him and correct the mistakes they identify.

4. CONCLUSIONS

As a very crucial manuscript relating to Turkish history, Kitab-ı Bahriye constitutes an invaluable cultural heritage. In his work, through maps and supplementary notes, Piri Reis offered to the benefit of the users' substantial information concerning the Mediterranean. Given the conditions of the time, these maps, all of which were hand-drawn, have an excellent degree of cartographical accuracy. His knowledge of the symbols in representing the details on the map, scale and directional accuracy of every map as well as the representation of important altitudes through shading and colouring techniques used on the map indicate the mastery of Piri Reis in the art of chart drawing. Moreover, his success in the poetic treatment of the thematic verses in the introduction and final chapter of the work serves as a proof of his refined poetic skills. The most important feature of Kitab-ı Bahriye is the descriptive notes which provide almost every sort of information about each mapped region. In this respect, Kitab-ı Bahriye could be considered as a very critical book of geography and the pioneer of atlases. As there was not printing press at the time, the original copy of the work was reproduced by different calligraphers without exact knowledge of the number of copies and it should be well preserved and digitalized through the use of technological means. Furthermore, we are of the opinion that, if properly introduced and promoted, the book will contribute to academic studies on various fields such as history, military science, geography and nautical science.

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BIOGRAPHICAL NOTES

Ibrahim YILMAZ was born in 1970 at Afyonkarahisar, Turkey. In 1992 he graduated from The University of Selcuk; Department of Engineering and Architecture Faculty as a Geodesy and Photogrammetry Engineer. He finished his MSc in 1996 and completed his PhD in 2002 at Graduate School of Natural and Applied Sciences that is within The University of Selcuk. He worked as Research Assistant in The University of Selcuk; Department of Engineering and Architecture Faculty between 1992 and 2002. Continuing from 2002, and current to date, he is working as Assistant Professor in Afyon Kocatepe University; Department of Engineering Faculty. Yilmaz has many studies on the area like cartography, historical maps, georeferencing and colour science.

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