

# Piri Reis

**World Maps and *Kitab I-Bahriye* (The Book of Sea Lore)**

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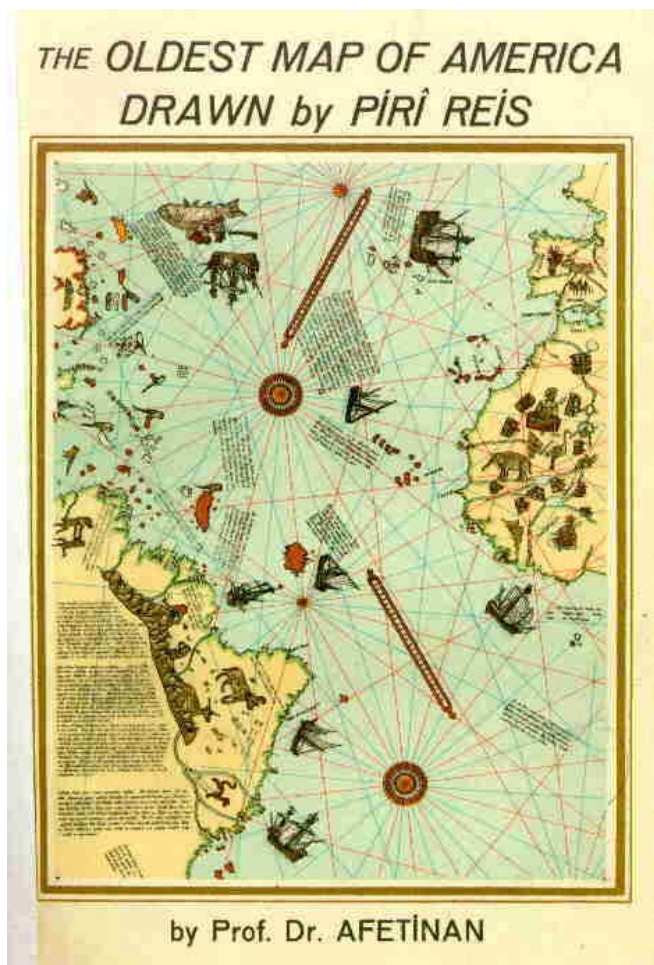
## PIRI REIS'S WORLD MAPS AND KITAB I-BAHRIYE

### Introduction

The Turkish navy are famous for their endless battles fought for Islam, from around the late eleventh century to the twentieth, from the most further western parts of the Mediterranean to the Indian Ocean and the Strait of Hormuz.<sup>1</sup> There is, however, another aspect of Turkish naval activity, that is their contribution to the wider subject of geography and nautical science. This aspect, however, like much else of Islamic science has been completely set aside. Hess puts it that European historians were only preoccupied with the identification of their own history. They first unravelled 'the dramatic story of the oceanic voyages,' their discoveries, and their commercial and colonial empires, and only stopped to consider how Muslim actions influenced the course of European history. Once such questions were answered, the study of Islamic history became the task of small, specialized disciplines, such as Oriental studies, which occupied a position in the periphery of the Western historical profession.<sup>2</sup> And the successful imperial expansion of Western states in Islamic territories during the late nineteenth and early twentieth centuries, Hess adds, 'confirmed for most Europeans the idea that the history of Islam, let alone the deeds of Ottoman sultans, had little influence on the expansion of the West.'<sup>3</sup>

Although Hess observes one or two improvements by the time he was writing, the picture was still the same as nearly a decade later after him, Brice and Imber in a note addressed to the Geographical Journal, observed that although European charts of the Mediterranean have received much focus, none has seriously considered similar Turkish maps.<sup>4</sup> Even worse, European scholars have dismissed Turkish works as being of Italian origin imported into the Ottoman Empire, or the work of Italian renegades, which Brice and Imber went on to demonstrate was without any foundation of veracity.<sup>5</sup>

Turkish nautical science was much in advance of its time, though. Hess notes that in 1517 Piri Reis presented his famous map of the New World to the Sultan, giving the Ottomans, well before many European rulers, an accurate description of the American discoveries as well as details about the circumnavigation of Africa.<sup>6</sup> Salman Reis, a year later, added more onto that. Goodrich, in a pioneering work,<sup>7</sup> also went a long way to correct the overall impression, giving excellent accounts of the Ottoman descriptions of the New World as it was then being discovered in all its strangeness, variety and richness.



<http://www.prep.mcneese.edu/engr/engr321/preis/afet/afet0.htm>

Amidst the Turkish men of the sea of great repute, Piri Reis is by far the one with the greatest legacy. There are two entries on him in the Encyclopaedia of Islam. The first by F. Babinger<sup>8</sup> and the second by Soucek.<sup>9</sup> By far, Soucek's entry is much richer, more informative and competently written. That of Barbinger, also out-dated, still offers a good variety of notes of primary sources likely to serve a devotee or researcher.

There is a further entry on Piri Reis in the Dictionary of Scientific Biography by Tekeli.<sup>10</sup> On the web, there is an excellent contribution by professor Afetinan, pages of text complemented by some first class maps at <http://www.prep.mcneese.edu/engr/engr321/preis/afet/afet0.htm> one such map, a very glossy Piri Reis' oldest map of America at: <http://www.prep.mcneese.edu/engr/engr321/preis/afet/pmapsm.jpg>

### **Piri Reis – the Naval Commander**

Piri Reis was born towards 1465 in Gallipoli. He began his maritime life under the command of his, then, illustrious uncle, Kemal Reis toward the end of the fifteenth and early centuries. He fought many naval battles alongside his uncle, and later also served under Khair eddin Barbarossa. Eventually, he led the Ottoman fleet fighting the Portuguese in the Red Sea and Indian Ocean. In between his wars, he retired to Gallipoli to devise a first World map, in 1513, then his two versions of *Kitab I-Bahriye* (1521 and 1526), and then his second World Map in 1528-29. Mystery surrounds his long silence from between 1528, when he made the second of the two maps, and his re-appearing in the mid 16<sup>th</sup> as a captain of the Ottoman fleet in the Red Sea and the Indian Ocean.<sup>11</sup>

### **The World Maps**

Piri Reis's first World Map in 1513, of which only one fragment is left shows the Atlantic with the adjacent coasts of Europe, Africa and the New World. The second World map from 1528-29, of which about one sixth has survived, covers the north western part of the Atlantic, and the New World from Venezuela to New Found Land as well as the southern tip of Greenland. The fragment of the first World map discovered in 1929 at the Topkapi Museum palace, signed by Piri Reis, and dated Muharram 919 (9 March-7 April 1513) is only part of the world of the map which the author handed over to the Sultan Selim in Cairo in the year 1517. The German scholar, P. Kahle, had made a thorough analysis and description of it<sup>12</sup>, observing that Piri Reis was an excellent and reliable cartographer. Kahle also points out that the whole picture of Columbus has been distorted, as nearly all the important documents related to him, and in particular his ship's journal, have been preserved not in their original but in abstracts and edited works, mostly by Bishop Las Casas.<sup>13</sup> Long after Kahle, in the mid 1960s, Hapgood returned to the subject of the Topkapi map,<sup>14</sup> but amazed by the richness of the map, and so convinced he was that Muslim cartography was poor, he attributed it to an advanced civilization dating from the ice age.<sup>15</sup> Hapgood's position seems now to edge on the ridiculous, not just for its exuberant assertions, and his stretching of evidence to beyond the fictional, but also in view of recent works on the history of mapping. The recent voluminous work by Harley and Woodward, by far the best on the subject, shows in rich detail, the meritorious role of Muslim cartography and nautical science.<sup>16</sup> As for Kahle's original find, one regret he expresses, was that the fragment found in the Topkapi Museum was only one from an original map, which included the Seven seas, (Mediterranean, India, Persia, East Africa, the Atlantic Ocean, and the Red Sea), that's the world in its vastness, and at a very early date. The search for the other parts has remained fruitless.<sup>17</sup>

## Kitab I-Bahriye

The matter of Piri Reis' World Map, however exciting, can be the object of a subsequent study; here, focus will be placed on his *Kitab i-Bahriye*. Kahle, again, pioneered the study of this work in two volumes.<sup>18</sup> His version is in German only, but there have been some very good contributions to the subject by Soucek most of all.<sup>19</sup> Mantran also brought his contribution, looking at the *Kitab i-Bahriye's* description of the coasts of Algeria, Egypt, Tunisia and France.<sup>20</sup> Esin made a good task of the Tunisian coast,<sup>21</sup> but on this latter country, it is Soucek's account which really gives most satisfaction.<sup>22</sup> There are a few Italian contributions by Bausani devoted to the Italian coast,<sup>23</sup> and of specific parts of it, the Venetian coast, the Adriatic and Trieste.<sup>24</sup> The Indian Ocean, too, is subject of interest.<sup>25</sup> And Goodrich informs that the Turkish Ministry of Culture and Tourism has recently (1988-91) published a four volume book of such Kitab.<sup>26</sup> It includes a colour facsimile of the said manuscript, each page being a transliteration of the Ottoman text into the Latin alphabet, a translation into modern Turkish, and one into English.<sup>27</sup> *Kitab I-bahriye* has also aroused the interest of archaeologists, geographers, historians, linguists.<sup>28</sup>

There are two versions of the *Kitab*. The first dates from 1521 and the second from five years later. There are many differences between the two. The first was primarily aimed for sailors, the second, on the other hand, was rather more a piece of luxury; which Piri Reis offered as a gift to the Sultan. It was endowed with craft designs, its maps drawn by master calligraphers and painters, and even seen by wealthy Ottomans of the sixteenth as an outstanding example of bookmaking.<sup>29</sup> For a century or more manuscript copies were produced, tending to become ever more luxurious, prized items for collectors and gifts for important people.<sup>30</sup> Its luxury aspect apart, this version also gives good descriptions of matters of maritime interest such as storms, the compass, portolan charts, astronomical navigation, the world's oceans, and the lands surrounding them. Interestingly it also refers to the European voyages of discovery, including the Portuguese entry in the Indian Ocean and Columbus's discovery of the New World.<sup>31</sup> This version also includes two hundred and nineteen detail charts of the Mediterranean and Aegean seas, and another three of the Marmara Sea without text.<sup>32</sup>

There are around thirty manuscripts of the *Kitab al-Bahriye* scattered all over libraries in Europe. Most manuscripts (two third) are of the first version. Soucek gives an excellent inventory of the location and details of both versions,<sup>33</sup> amongst which are the following:

### *First version:*

- Istanbul Topkapi Sarayi, Bibliotheque, ms Bagdad 337
- Istanbul Bibliotheque Nuruosmaniye, ms 2990
- Istanbul Bibliotheque Suleymaniye, ms Aya Sofya 2605
- Bologna, Bibliotheque de l'Universite, collection marsili, ms 3612.
- Vienna, Nationalbibliothek, ms H.O.192.
- Dresden, Staatbibliothek, ms. Eb 389.
- Paris, Bibliotheque nationale, suppl.turc 220.
- London, British Museum, ms. Oriental 4131.
- Oxford, Bodleian library, ms Orville X infra.
- USA, private collection.

2<sup>nd</sup> version:

- Istanbul, Topkapi sarayi, Bibliothque, ms. Hazine 642.
- Istanbul, Bibliothque Koprulu Zade fazil Ahmad pasa, ms. 171.
- Istanbul, Bibliothque Suleymaniye, ms Aya Sofya 3161.
- Paris Bibliothque nationale suppl. Turc 956.

### Nautical instructions in Kitab I-Bayrye

*Kitab-i bahriye* translated by Hess as *Book of Sea Lore*,<sup>34</sup> is what is commonly known as a portulan, i.e a manual for nautical instructions for sailors, to give them good knowledge of the Mediterranean coast, islands, passes, straits, bays, where to shelter in face of sea perils, and how to approach ports, anchor, and also how provides them with directions, and precise distances between places.<sup>35</sup> It is the only full portolan, according to Goodrich of the two seas (Mediterranean and Eagean Seas) ever done, and caps both in text and in charts over two hundred years of development by Mediterranean mariners and scholars.<sup>36</sup> Whilst Brice observes that *Kitab-I Bahriye* provides 'the fullest set known to us of the kind of large scale detailed surveys of segments of coast which, by means of joining overlaps and reduction to a standard scale, were used as the basis for the standard Mediterranean Portolan outline.'<sup>37</sup> And in his introduction, Piri Reis mentions that he had earlier designed a map of the world which deals with the very recent discoveries of the time, in the Indian and Chinese seas, discoveries known to nobody in the territory of the Rum.<sup>38</sup> He also gives reasons for making his compilation:<sup>39</sup>

**'God has not granted the possibility of mentioning all the aforementioned things (i.e cultivated and ruined places, harbours and waters around the shores and islands of the Mediterranean, and the reefs and shoals in the water) in a map since, when all is said and done, [a map] is a summary. Therefore experts in this science have drawn up what they call a 'chart' with a pair of compasses according to a scale of miles, and it is written directly on to a parchment. Therefore only three points can fit into a space of ten miles, and there are places of less than ten miles. On this reckoning only nine points will fit into a space of thirty miles. It is therefore impossible to include on the map a number of symbols, such as those showing cultivated and derelict places, harbours and waters, reefs and shoals in the sea, on what side of the aforementioned harbours they occur, for which winds the harbours are suitable and for which they are contrary, how many vessels they will contain and so on.**

**If anyone objects, saying, 'Is it not possible to put it on several parchments?' the answer is that the parchments would become so big as to be impossible to use on board ship. For this reason, cartographers draw on a parchment a map, which they can use for braod stretches of coast and large islands. But in confined spaces they will a pilot.'**

And whilst Piri Reis notes that his *Kitab* will supply enough good detail to obviate the need for a pilot, this passage also shows his familiarity with small scale portolans of the Mediterranean, his *kitab* being designed to overcome their shortcomings.<sup>40</sup>

The contents of *Kitab-I Bahriye* are organised in chapters, 132 of them in the first version, and 210 in the second. Each is accompanied by a map of the coast or the island in question. In Harley's, alongside

Soucek's article, are beautiful maps and charts of the island of Khios, the Port of Novograd, the city of Venice, the Island of Djerba etc...<sup>41</sup> It was, indeed, Piri Reis's recurrent emphasis that text and map complement each other.<sup>42</sup> In places, Piri Reis follows his predecessors that include Bartolomeo de la Sonetti (himself having found inspiring himself in previous Islamic sources). On the whole, though, Piri Reis brings many improvements.<sup>43</sup> The copy at the Walters Art gallery of Baltimore in the USA (W.658), which includes sixteen supplemental maps, attracts much focus by Goodrich.<sup>44</sup> Maps one, two, three and four bear an extraordinary beauty, and map three (f.40b) World Map in a Double Hemisphere, appears in no other manuscript. Furthermore, this map, Goodrich observes,<sup>45</sup> is very similar to the 'Mappe Monde' of 1724 by Guillaume de L'Isle.<sup>46</sup> Map Four (f.41a) is the Oval World Map with the Atlantic Ocean in the Center. Goodrich also notes<sup>47</sup> that a later map (from 1601), Anoldo di Arnoldi's two sheet world map, an oval projection called 'Universale Descrittione Del Mondo' is almost exactly the same as Piri Reis'.<sup>48</sup>

The wealth of information in *Kitab I-Bahriye* is articulated in the series of articles on the Mediterranean coasts. The French coast,<sup>49</sup> here briefly summarized, includes four maps, and delves on some important locations such as the city of Nice, or Monaco, which Piri Reis observes, offers good possibilities for anchorage. Marseilles, its port and coastline, receive greater focus; and from there, it is said, French naval expeditions are organized and launched. The Languedoc region, from Cape of Creus to Aigues Mortes, is inventoried in every single detail, too: its coastline, water ways, ports, distances, and much more. *Kitab I-Bahriye* thus offering, not just accurate information to sailors, but also pictures of places of times long gone to readers and researchers.

The southern shores of the Mediterranean, however, capture even greater focus. They were the natural base of the Turks led by Kemal rais, and amongst whom was also Piri Reis. The description of the Tunisian coast, in particular, deserves thorough consideration. Mantran's<sup>50</sup> study although adequate is less worthy than Soucek's, which is here relied upon.<sup>51</sup> Soucek uses the term Tunisia but recognises that Ifriqyah is more correct (note 16, p. 132) as the focus stretches from Bejaia (today's Algeria in the West) to Tripoli (Libya) in the east. At the time, though, both places were under the Hafsid dynastic rule. The Muslims of North Africa, as a rule, welcomed the Turks not as aliens but as allies (p. 130.) At the time, the inhabitants of North Africa were, indeed, under constant threat of attacks by European pirates, who often came disguised as Muslims in order to capture Muslims (note 4, p. 161). Turkish seamen used those southern shores to rest between their expeditions to the north and to the West, and often wintered in one of the harbors or islands, and this is how Piri Reis became familiar with these shores (p. 130).<sup>52</sup> First describing Bejaia, he states that it was a handsome fortress situated on a pine tree covered mountain slope with one side on the shore. The city's ruler was called Abdurrahman, related to the Sultan of Tunis, a family descendant from Ommar Ibn al-Khatib, he holds (p.149). He observes that among all the cities of the Maghreb, none would offer a spectacle comparable to it. Piri Reis must have seen the Hammadite palaces and was so impressed by them before they were destroyed by the Spaniards when they took the city (note 2 page 160). When the Spaniards, indeed, took the city in 1510, they forced the population to flee to the mountains, settled part of it, and razed the rest (p.151).<sup>53</sup> Piri Reis moves onto Jijel and the region around, noting that it was under the rule of Bejaia (prior to the Spanish take over), under the protection of Aroudj Barbarosa (p. 157). Further to the east, his attention is caught by Stora, (now part of Skikda), its ruined fortress, and the large river which flows in front of its harbor, its water, he notes, tasting like that of the Nile. Before crossing into today's Tunisia, Piri Reis notes the presence of lions in the Bone (Annaba) region (p.169), people often falling victims to their hunger.<sup>54</sup> Piri Reis begins his exploration of Tunisia proper with Tabarka, drawing attention that safe anchorage is on the western side, where it was navigable, and water

deep enough. South of the island of Calta (Galite), he notes great danger when southern winds blow. The island, he points out has exceptionally good quality water 'tasting of rose-water,' (p.177), and includes innumerable flocks of wild goats.<sup>55</sup> Bizerte, on the other hand, impresses for its sturdy fortress, its good port for anchorage, and abundance of fish (p.185). Further on, at Tunis, great interest is in its climate, commerce, its rulers and their rivalries. The city has fifty thousand houses, each 'resembling a sultan's palace' (p.197), and orchards and gardens fringe the city. In each of these gardens, were villas and kiosks, pools and fountains, and the scent of jasmine overpowering the air. There were water wheels, too, and so many fruit people hardly paid any attention to them. The city was visited by venitians and Geonese traders, their ships loading with goods before departing; their site of anchorage in the port nine miles in front of the city (p.197). The harbor of Tunis itself is a bay which opens toward the north, and anchorage, he points out, is seven fathoms deep, the bottom even, and the holding ground good. Further safety of the port is secured from enemy fleets by the means of a tower with a canon guarding it (p.199). To Cape Cartage, also called cape Marsa, uninterrupted anchorage is secure, and ships can winter all over the ports. Danger lies, however, in the vicinity of the island of Zembra, which is exposed most particularly to southerly winds, whilst rocks often covered by water (p 201) can be very treacherous. Along the Hammamet coast, the sea has shallow waters, an even bottom and white sand. The depth in the open sea, one mile offshore, is four to five fathoms. (p. 219). Continuing to Sousse, he points to the large fortress on the coast facing the North east; in front of it is a harbor built by 'infidels'; a man made breakwater, as in the Khios harbor, protecting it on the outer side. Water, however, is too shallow for large vessels (p.221). The island of Kerkena offers excellent anchorage conditions regardless of the severity of the sea storms; hence an ideal place for wintering (p.235). The same goes about Sfax. Around Kerkenna, however, he notes, is the constant threat of European pirates, especially where waters are deep enough to allow the incursion of their large boats. The island of Djerba, of all places, is what attracts most attention (pp 251-267). Piri Reis goes into the detail of its people, history, customs, economy, and, of course, of the sailing conditions close and around the island, including anchorage, nature of currents, tides, and risks to sailors. The focused attention on Djerba is the result of his earlier experiences, when, with his uncle Kemal, he conducted rescues of Muslim and Jewish refugees as they were being cleansed out of Spain following the Christian Re-conquest.<sup>56</sup> Now entering Libya, heis focus falls on Tripoli (pp. 273-285), its history, commerce, and its thriving port. He indicates how to sail there using a mountain as landmark. Anchorage at the city port is good, he notes, three islets on the northern side of the harbor, cutting down the wind velocity. By that time he is describing the city, though, it had already fallen into Spanish hands, something that aggrieved him so much. It was the loss of the place, of course, that of fellow companion seamen, and above all the destruction of the city fortress that compounded such grief. He notes (p.273) that in the Maghreb, no fortress was as handsome as Tripoli's, all its towers and battlements as if cast from bee's wax, and the walls painted in fresh lime. The fortress had fallen on July 25, 1510; and so much joy there was in Spain as in the rest of Christendom, that Pope Julius II went on a procession of thanks giving.<sup>57</sup>

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<sup>3</sup> Ibid.

<sup>4</sup> W.Brice, and C. Imber: Turkish Charts in the Portolan Style, *The Geographical Journal*, 144 (1978); pp 528-529 at p. 528.

<sup>5</sup> Ibid.

<sup>6</sup> A.C. Hess: The evolution, op cit, p. 1911.

<sup>7</sup> T.D. Goodrich: *The Ottoman Turks and the New World*; Wiesbaden , 1990.

<sup>8</sup> F. Babinger: Piri Reis, in *Encyclopaedia of Islam*, first edition (1913-30), vol vi; Leiden. E.J. Brill, pp 1070-1

<sup>9</sup> S. Soucek: Piri Reis, in *Encyclopaedia of Islam*, New edition, 1995, Vol VIII, Leiden, Brill, pp 308-9.

<sup>10</sup> S. Tekeli: `Piri Reis' in *Dictionary of Scientific Biography*, vol 10; Editor C.S. Gillispie, Charles Scribner's Sons, New York, 1974, pp 616-9.

<sup>11</sup> S.Soucek: A Propos du livre d'instructions nautiques de Piri Reis, *Revue d'Etudes Islamiques*, Vol 41, pp 241-55, at p. 242.

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<sup>13</sup> Ibid; introduction.

<sup>14</sup> C. Hapgood: *Maps of the Ancient sea Kings*, Philadelphia, 1966.

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<sup>18</sup> P. Kahle: *Piri Reis, Bahriye*, Berlin 1926, 2 vols.

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<sup>22</sup> S.Soucek: Tunisia in the Kitab-I Bahriye of Piri Reis, *Archivum Ottomanicum*, Vol 5, pp 129-296.

<sup>23</sup> Bausani A: L'Italia nel Kitab I-Bayriye di Piri Reis, *Il Vetro*, 23 (1979), pp 173-96.

<sup>24</sup> Bausani A: Venezia e l'Adriatico in un portolano Turco, *Venezia e l'Oriente* a cura di L.Lanciotti; Florence: Olschki, 1987, pp 339-52.

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<sup>30</sup> Ibid, p. 117.

<sup>31</sup> S. Soucek: *Islamic Charting*, op cit, at p. 272.

<sup>32</sup> T. Goodrich: Supplemental, op cit, p.117.

<sup>33</sup> A. Soucek,, *A propos*, op cit, pp 244-5.

<sup>34</sup> A.C. Hess: *The Evolution*, op cit.

<sup>35</sup> S. Soucek: *A propos*, op cit, pp 242.

<sup>36</sup> T. Goodrich: Supplemental, op cit, at p.117.

<sup>37</sup> W. Brice: *Early Muslim Sea-Charts*, in *The Journal of the Royal Asiatic Society*, 1977, pp 53-61, at p.56.

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<sup>40</sup> Ibid, p.529.

<sup>41</sup> S. Soucek: *Islamic*, op cit,, pp 277-80.

<sup>42</sup> Ibid at 277.

<sup>43</sup> See fig 1 in W. Brice: *early Muslim sea-charts*, op cit, at p. 57

<sup>44</sup> T.Goodrich: Supplemental, op cit, p. 120.

<sup>45</sup> T.Goodrich, Supplemental, op cit, p.122.

<sup>46</sup> See R.V. Tooley: *French mapping of America*, London: Map Collector's Circle, 1967.

<sup>47</sup> T.Goodrich: Supplemental, op cit, p.122.

<sup>48</sup> See Rodney W.Shirley: *The Mapping of the World, Early Printed World maps, 1472-1700*; London; The Holland Press, 1984, no 228 and plate 180.

<sup>49</sup> R.Mantran: *Description des cotes Mediterraneeenes de la France*, op cit.

<sup>50</sup> R. Mantran: *La Description des cotes de la Tunisie...* op cit.

<sup>51</sup> S.Soucek: *Tunisia in the Kitab-I Bahriye of Piri Reis*, *Archivum Ottomanicum*, Vol 5, pp 129-296.

<sup>52</sup> With respect to this 'Tunisian' coast, Soucek notes, it is the first version of the *Kitab* which is much richer than the second.

<sup>53</sup> Bejaia was to be retaken forty five years later, in 1555 by Salah Reis, beylerbey of Algiers, but following the Spanish entry, it never regained its former glory.

<sup>54</sup> In 1891, the French killed the last lion of North Africa between Bone and Bizerte (Tunisia) (Note 5, p. 180. Source in Soucek: L. Lavauden: *La Chasse et la faune cynegetique en Tunisie*, Tunis, 1924, p. 9.

<sup>55</sup> That is until the French exterminated them all (Lavauden, op cit, pp 18-19.)

<sup>56</sup> S. Soucek: *Islamic Charting*, op cit, p 267.

<sup>57</sup> Note 8, p. 287 in Soucek., Source Sanuto *Diarii*, v, fol.109.

The city was retaken from the Spaniards in 1551 by Sinan Pasha and Turgut.

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