Title: Chart of the Ocean Sea  
Date: 1513  
Author: Piri Reis  

Description: During a naval campaign against Venice in 1501, a Turkish fleet captured a Spanish ship in the western Mediterranean. One of the prisoners taken had earlier made three voyages to the West Indies with Columbus and carried with him a set of Columbus’ American charts. In this fortuitous manner Kemal Reis, the famous Turkish admiral, acquired maps of great importance showing a newly discovered part of the world.

Piri Reis, nephew of Kemal, was born in Gallipoli on the shore of the Dardanelles in 1470. Piri also became an admiral and is remembered as a scholar of navigational science and an accomplished linguist. He produced charts, an important book on navigation, and a superb map of the world, which employed the Columbus maps taken by his uncle’s sailors. Although fragmentary, this work and the Zorzi sketches (#304) are the only world maps with a direct Columbus delineation for part of America.

The Piri Reis map of 1513 was discovered in 1929 by Bey Halil Ethem, director general of the Topkapi Serai in Istanbul, when that palace was being converted to a museum of antiquities. He showed the map to Prof. Adolf Deissmann, who was then researching Greek and Latin manuscripts in the Serai Library. Deissmann, in turn, showed it to Dr. Paul Kahle, a noted German Orientalist who had previously published an incomplete transcription and translation of the earlier version of the Kitab-i Bahriye. Kahle studied the document and presented his initial findings at the Eighteenth International Congress of Orientalists in Leiden on 9 September 1931. Several published articles and a book by Kahle soon followed.

The chart is drawn on European Roe Deer skin which is one of the smallest of the Deer family having a body length varying from 95 to 130 cm and a shoulder height of 65/75 cm. Thus the probable maximum skin available for use as a chart base is no more than 90 cm girth and 110 cm length. The map itself is actually only the surviving western portion (about one-third) of a larger world map, the remainder having been lost. The surviving portion, measuring about 90 cm X 65 cm, with the obvious overlap joint to the north and is thus in all probability the full girth of the skin and depicts the Atlantic Ocean with its islands and coasts and has many ships, animals, people, and inscriptions. The inscriptions are written in the Arabic script. The language of the inscriptions (with one exception) is Ottoman-Turkish.

Delineated in nine colors, the map shows the Atlantic Ocean and adjoining parts of South and Central America, the islands of the West Indies, and parts of southwestern Europe and West Africa. Many lengthy notes in Turkish appear on the map, including geographical descriptions and detailed information on the sources of the delineation. There are references to the voyage of St. Brendan, the legendary Irish monk who in the sixth century supposedly discovered an island in the North Atlantic called the “Promised Land of the Saints.” Long sought by sailors, St. Brendan’s island was widely believed to exist in Columbus’ time and appeared in some form and location on most early European maps. According to Piri Reis himself, the map was based upon eight Ptolemy maps, an Arabic map of India, four new Portuguese sea maps of Sind, Hind and China, and the map of America drawn by Columbus.

A long passage describes Columbus’ first voyage experiences, from initial difficulties in obtaining sponsorship to encounters with the natives. Piri Reis specifically
mentions his use of the West Indies charts drawn by Columbus. He also refers to information from Portuguese and Arabic sources that proved important in developing his delineation of Africa and Asia.

The Piri Reis map is drawn on gazelle hide, with a web of lines crisscrossing the Atlantic called “rhumb lines”, typical of the late medieval mariners’ charts. Most scholars do not believe these lines were used to indicate latitude and longitude but were used as an aid in laying out a course. The style of the map is European although the lengthy commentary is written in Turkish. Piri comments that no one in Turkey had ever seen such a map. Presumably he referred to both the novelty of its delineation and the profuse depictions of people and animals that violated the customary Islamic prohibition against portraying living objects in artworks. The map was not only unusual in Turkey, but few people in any country, including Spain and Portugal, had access to a chart of the world incorporating the new discoveries.

In one of the inscriptions on the map itself, Piri Reis lists his sources, and tells us how he used them: No one now living has seen a map like this. I have composed and constructed it using about twenty maps and mappaemundi; these are the maps which were composed in the time of Alexander of the Two Horns, and which show the inhabited portion of the earth. The Arabs call these maps ja’fariya.

I have used eight ja’fariya maps, an Arab map of India and four recent Portuguese maps - these maps show the sea of Sind, India and China according to mathematical principles - and also a map of the western regions drawn by Colombo. The final map was arrived at by reducing all these maps to the same scale. Therefore the present map is as accurate for the Seven Seas as the maps of our own countries used by sailors.

Another note gives the date and authorship of the map: This map was drawn by Piri ibn Hajji Muhammad, known as the nephew of Kemal Reis, in the month of Muharram of the year 919 [1513].

The mappaemundi, or world maps, that Piri Reis says were “composed in the time of Alexander of the Two Horns,” as Alexander the Great was known in the Muslim world, were maps based on Ptolemy. (Arab authors confused Claudius Ptolemeus, astronomer and geographer, who lived in the second century, with Ptolemy I, friend of Alexander and ruler of Egypt, who died in the third century BC.) It is obvious, however, from looking at Piri Reis’ map that the mappaemundi he used as a source for the west Atlantic were European, as the depiction of St. Brendan’s Island shows. Piri’s caption to the charming picture of two men lighting a fire on the back of the fish reads: They say that long ago a priest named San Vulrandan [St. Brendan] sailed the seven seas. It is said that he encountered this fish and, taking it for dry land, lit a fire on its back. When the back of the fish grew hot, it dived under the water. The people fled in their boat back to their ship. The Portuguese do not mention these events; they have been taken from old mappaemundi.

Among the map’s illustrations are two lozenges, which give the scale, and beautifully drawn ships, some accompanied by inscriptions which record important discoveries. One is almost certainly an account of the expedition of Cabral in 1500; Cabral discovered Brazil when he was blown off course across the Atlantic while on his way to India.

The Iberian Peninsula and the coast of West Africa are carefully drawn, in a manner suggesting the style of the practical mariners’ charts called portolanos. Here many of the place names are given in Turkish, rather than being merely transliterated from Portuguese or Spanish—showing that the Ottomans had practical experience of their own along those coasts.
At the top of the map is a ship anchored near a fish, with two people sitting on its back. The accompanying inscription tells a tale from the life of the Irish Saint Brendan, a charming medieval legend. Faithfully copied by Piri Reis from one of his source maps, it is evidence that at least one of the mappaemundi mentioned as sources by Piri Reis was a medieval European production.

Another immediately striking feature of the map is the number of islands, most of them legendary, and some of them adorned with parrots. Maps showing islands scattered through the Atlantic were current in the later Middle Ages, and a globe made by Martin Behaim in 1492 (#258) - the same year Columbus first set off - shows a quantity of them; so does the Toscanelli map (#252), which we know Columbus used.

Previous researchers of this map, such as Paul Kahle and Charles H. Hapgood, have matched almost every bay, promontory, coastal feature, and geographical element in the New World with an existing feature. These researchers may not have understood that it was common for cartographers in the 16th century to draw coastlines and geographical features on their maps according to what they thought should be the case, not necessarily according to any knowledge of the actual geography. Hence, 16th century maps commonly contain geographical features that do not really exist. It can be, in many cases, an error to seek to equate each and every feature on a 15th or 16th century map with an equivalent real geographical feature.

On the right side of the map are clearly shown the coastlines of the Brittany Peninsula of France, the Iberian Peninsula, the bulge of West Africa, the Azores, Madeira, the Canary Islands, and the Cape Verde Islands." On the left side of the map are shown the coastline and bulge of South America, the Lesser Antilles, Puerto Rico, and what appears to be a confused depiction of Hispaniola, Cuba, the Bahamas, and Central America in the extreme northwest corner of the map. At the bottom of the map is a large continental landmass connected to South America. Presumably, the missing eastern portion of the map extended from Africa and Europe to China and the east coast of Asia. The omission of the British Isles, Iceland, Greenland, and Newfoundland from the surviving portion of the map and the blank strip along the top edge of the map where another vellum piece was attached indicate that the vellum containing these northern regions has also been lost.

**South America.** The delineation of the coast of Brazil on the Piri Reis map is much more accurate than that of the Caribbean. The relationship and distance between South America and the West African coast, for example, is much more correct than on most European maps of the time - and the place names along the coast, clearly transliterated from Italian and Spanish names, are taken from accounts of the voyages of Amerigo Vespucci and others.

The most striking topographical detail, and the one that has caused the most discussion, is the chain of mountains running through South America - the mountains which Charles Hapgood (Maps of the Ancient sea Kings) identified as the Andes. The rivers that issue from their base are obviously meant to be the Amazon, the Orinoco and the Rio Plata, and the animal with two horns standing on the mountains is Hapgood’s “llama”. Interestingly, though, the Piri Reis map is not the only early map - nor the first - to show mountains in the interior of South America. The Nicolo de Caveri map (#307), now in the Bibliotheque Nationale in Paris, the Lenox Globe (#314) and the Martin Waldseemüller chart of 1507 (#310) both show the east coast of South America, though schematically drawn, and a chain of mountains adorned with trees. The Caveri map was
drawn between 1502 and 1504, long before the eastern coast of South America had been explored. As there is a striking similarity between this map and the Piri Reis map, it is therefore possible that one of Piri Reis’ source maps was based on that of Caveri.

The coastline of northeastern South America indicates that information came from Ojeda, Vespucci, or one of their companions. The West Indies are poorly drawn and difficult to recognize. While Guadalupe and the islands immediately adjacent in the Lesser Antilles are remarkably accurate; the island of Hispaniola [Haiti] has quite a different form here from other contemporary maps, it is more reminiscent of the contemporary shape of the East Asian island, then called Cipangu [Japan]. For these Piri Reis no doubt had a Columbus drawing. This unusual chart with its complicated and fascinating history includes the only surviving delineation by Columbus of his discoveries.

Forty-two place names are inscribed on the islands and coasts of the New World on Piri Reis’ map. All but three are transcriptions from Spanish or Portuguese, with the odd exception of one Italian place name - undizi virgini, Italian dialect for “Eleven Virgins,” the present-day Virgin Islands. The correct name, given by Columbus on his second voyage in 1493, was Las Once Mil Virgenes after the legend of St. Ursula and the Eleven Thousand Virgins. The word “thousand” had been dropped, and oddly enough, twelve little islands are depicted.

Some of these names are easily identifiable - Izle de Spanya is obviously Hispaniola, modern Haiti/ Dominican Republic. The shape, however, reproduces that of Cipangu [Japan] on the Behaim Globe of 1492 (#258), rather than the true shape of the island. This is evidence for the famous chart Columbus took along on his first voyage, showing the location of islands in the western Atlantic. Here is the entry, made in his log on September 25, 1492: “The admiral talked with Marin Alonso Pinzon, captain of the other caravel, the Pinta, concerning a chart which three days before he had sent to him to the caravel and in which, as it appears, the admiral had certain islands depicted as being in that sea.” It is possible that Columbus at first marked his discoveries on a pre-existing chart, and this would explain the retention of the conventional shape of Hispaniola. Two other place names occur on Izle de Spanya; al-Jazira, which is simply the Arabic word for “The Island,” and Paksin Vidada, almost certainly Puerto Navidad.

Two names just north of Izle de Spanya may also come from the original chart carried on his voyage by Columbus. They are a word that can be transcribed istunasid, which may conceal the imaginary island of Satanazares marked on the Benincasa map, and, near it, Ile Verde, the mythical “Green Isle” marked on so many medieval and Renaissance charts. The variation in the two transcriptions used by Piri Reis for island - izle and ile - must reflect Spanish (isla) and Portuguese (ilha) originals respectively.

Another name that is transparent is Sancuvano Batisdo, San Juan Bautista, now Puerto Rico. Opposite this island, on what appears to be the mainland, is a purely Arabic place name - Qal’at Faridat, “Fort Precious Pearl.” There is no reference to anything of the kind in the sources.

The place name Sancuvano Batisdo is also applied to another island, in the Lesser Antilles just west of Vadluq, which is obviously Santa Maria de Guadalupe. This argues that Piri Reis had more than one chart of the Caribbean; the repetition of this place name and of certain coastal features probably resulted from his attempt to fit together two quite different maps.
No one who looks at the southern part of the map can help being struck by the accuracy of the South American coast, derived from Portuguese charts, as the place names show. A caption explains:

_A Portuguese ship on the way to India met a contrary wind blowing from the shore. The wind drove it from the coast.... After being driven south by the storm, they sighted a coast opposite them. They approached it... and saw that there were good anchorages, so they dropped anchor and went ashore in boats.... They stayed eight days, trading with [the] people by signs.... The said bark returned to Portugal without going to India, and made a report. Eight caravels were sent. They described these coasts in detail and this has been copied from them._

This refers to Pedro Alvares Cabral's accidental discovery of Brazil in 1500, on his way to India. As Piri Reis makes clear in his _Kitab-i Bahriye_, the secret of rounding the Cape of Good Hope, at the southern tip of Africa, was first to head far to the southwest to pick up the winds that would drive one around the Cape. Doing just this, Cabral discovered Brazil and spent a number of days at anchor. Contrary to what Piri says, Cabral did go on to India, but he sent a ship back to Portugal with news of the discovery. The king sent an expedition to Brazil the following year, commanded by Gonsalvo Coelho, aided by the ubiquitous Italian navigator Amerigo Vespucci. Some of the place names along this coast seem to go back to those given by Vespucci. Others are more mysterious. _Sanu Saniyru_ must be Rio de Janeiro, but what is _Qatinu_? Is it _Cananea_, the southernmost point reached by Vespucci? And what of the next four names south - _Izle Matus, Ila de Dasane, Ila de Viyola_ and _Ila de Sara_?

_Ila de Sara_ has a caption: _These islands are uninhabited, but spices abound._ This, the unnamed islands nearby and the stylized, indented coastline, seem to repeat Caribbean features. Again, one suspects that an error has been made by trying to reconcile a number of divergent charts. On the mainland an inscription reads: _In this country are found white-haired creatures like this, as well as six-horned cattle._ The Portuguese had written this on their maps. What are six-horned cattle?

The last caption to the south, apparently describing the triangular indented coastal feature so reminiscent of “Cuba” in the Caribbean portion of the map, reads: _There is no trace of cultivation in this country. Everything is desolate, and big snakes are said to be there. For this reason the Portuguese did not land on these shores, which are said to be very hot._ Wherever this is meant to be, it is not Patagonia!
Detail: South America displaying a cynocephalus (dog-headed man), a blemmya (man with his face on his chest) and new world animals
The Piri Reis map shows some legendary cephalopods, dog-headed figures, etc. taken from ancient and medieval sources. However, it also displays a large number of real-life mammals for the first time, in South America, together with some snakes and the symbolic parrots. The parrots are green with red beaks and long tails, sitting on all of the Caribbean islands and described as being of four kinds: white, red, green and black. There are monkeys with long tails, a one-horned bovid, a two-horned spotted ungulate with a tusk, a six-horned animal, which might possibly be one of the South American hollow toothed deer with much branched antlers, and an animal that might well represent a llama were it not for its horns. A single carnivore, looking agile with its tail flourishing, resembles the very common South American martens or *tayras* (mustelids) but could, perhaps according to Wilma George, represent the larger, more frightening and, therefore, more written about jaguar.
The mountains are drawn in outlines and the rivers are marked with thick lines. In the map Piri Reis adopts and applies the rules of emblematic signs mentioned on page 28 in his book known as the Bahriye [On the Sea]. Thus he indicates the rocky regions with black, the sandy and shallow waters with reddish dots, and the rocky parts in the sea that cannot be seen by sailors with crosses.

In 1511 Piri Reis began to draw a new map of the world that was to incorporate all of the recent Spanish and Portuguese discoveries. To do so, he used about 20 source maps. Among them, he wrote, were eight maps of the world done in the time of Alexander the Great (the fourth century B.C.), an Arab map of India, four Portuguese maps of the Indian Ocean and China, and his uncle Kemal’s bequest, “a map drawn by Colombo in the western region.” He did not, however, say what the other six source maps were.

In Gallipoli, where he temporarily retired, Piri Reis reduced his source maps to a single scale - a difficult task in those days - and spent three years producing his map. When it was finished he added this inscription: “The author of this is the humble Piri ibn Hajji Muhammad, known as the nephew of Kemal Reis, in the town of Gallipoli in the Holy Month of Muharram of the year 919 [A.D. 1513].”

A close study of the map shows us how faithful Piri Reis was to his sources. In the bibliography attached to the map he claims that his map is as sound and accurate for the seven seas as the map of the Mediterranean. From the various Turkish names on these coasts like Babadagi, Akburun, Yesilburun, Kizilburun, Altin Irmagi, Guzel Karfcz, Kozluk Burnu, Iki Hurmalik Burnu, etc., we deduce that in his drawing he made use not only of the Portuguese maps in his possession, but also of the information supplied by various Turkish sailors faring along these coasts. In his drawing of the coastline and in his marking of the sites of importance on it we again notice his remarkable accuracy. He is quite accurate also in the positions of the Azores, Madeira and the Canary islands.

As for the northern part of the map, we see here how Piri Reis benefited by the new Portuguese maps and recorded on it the discoveries made before 1508 on the North American coast by Amerigo Vespucci, Pinzon and Juan de Solis. Some of the place names on the South American coast, like Santa Agostini, San Megali, San Francisco, Port Rali, Total Sante, Abrokiok, Cav Frio and Katenio show a close resemblance to their modern forms. Except for the two entries about the name and the date of the map, all the other entries are written by a calligrapher. This fact can account for the changes to be observed in various names on the map. Another reason for this may easily be the inadequacy of the Arabic script then in use, for expressing Turkish words.

All the principal rivers in South America are marked on the map, though the names are not written, it is remarkable that he should have shown the river La Plate on the map, when Pinzo and Juan de Solis passed by it and from all accounts, never even noticed it. Outside the parts relating to Columbus’ map, the scales in miles are astonishingly accurate. The land extends unimpeded to the west from the south of the Plate. Evidently this part of the map is drawn in accordance with the Ptolemaic idea of the world. Eight years later, when he had finished the preface to the book he affirms that, further south it is not land but sea, which shows that he was following later discoveries with careful attention. And yet, from the point of view of the historical importance of these geographic discoveries, this map is particularly significant for Central America.
Antarctica and the Eastward-Trending Coast. The presence of a land to the south, often connecting all major landmasses, had a long tradition in geographical thought, originating with the ancient Greeks, many of whom believed such a land must exist in order to balance the oikoumene, or inhabited landmass of the northern hemisphere. The Greeks also believed that land surrounded water rather than water surrounded land. Some cosmographers of the early 16th century held that the ocean was surrounded by land. This theory, in which Africa and Asia were connected to the Southern Continent, *Terra Australis*, held that the Indian Ocean was landlocked sea. This theory originated with Hipparchus in the second century B.C. and was later promulgated by Ptolemy as a land bridge between Africa and Asia.

The Ptolemaic geographical theory of the distribution of the lands and seas formed the major geographical conception of Europeans in the 15th and early 16th centuries. The maps of Ptolemy, widely printed after 1477, show a *Terra Incognita* south of 15° S, connecting Africa and Asia. Even after the sea route from Europe around the south of Africa to India and the Far East was found and the absence of land connections from southern Africa to southern Asia was determined, Ptolemy’s authority among Renaissance cosmographers and geographers continued, and this great southern landmass was a common feature of 16th century world maps. Even the great Mercator, according to his contemporary biographer, believed in this continent, which he “realized was unknown and still awaiting discovery, but whose existence he thought he could prove by solid reasoning and argument. It could not be less in its geometric proportions, size, weight, and gravity than the other two [the Old World and the New World], otherwise the world would be unable to remain on its axis. Writers call this the Southern Continent.”

When the authoritative views of Ptolemy were combined by geographers with the newly discovered open sea to the south of Africa and the newly discovered continent to the west of Europe, a belief in a land connection between South America and the Southern Continent seems to have arisen. The connection of South America to *Terra Australis* shown on the Piri Reis map is also shown on the Portuguese Lopo Homem map of c. 1519-21 (#329.1) and the Spanish Juan Vespucchi map of 1524 (#335). A slightly similar arc to the southeast coast of South America is seen on the Cantino map of 1502 (#306), the Contarini-Rosselli map of 1506 (#308), and the Lenox Globe of c. 1510 (#314). While none of the maps derived from de Canerio’s shows an Antarctic continent (#307), other groups of early maps do. Beginning in the early 15th century, mapmakers often indicated a huge southern landmass that linked Africa to Asia and made a landlocked sea of the Indian Ocean, a geographical notion derived from Ptolemy’s references to a “southern land”. When Magellan passed through the strait that now bears his name, he sighted Tierra del Fuego to the south and assumed that it was a promontory of Ptolemy’s southern landmass; it was not until Drake’s southern voyage of 1578 that this idea too was exploded.

The search for *terra australis* went on for centuries, incidentally leading to the discovery of the land which now fittingly bears the name that so fascinated Renaissance cartographers: Australia. But Antarctica itself eluded the great discoverers.

There are, however, some indications that the coast of Antarctica was sighted before its “official” discovery in 1820. Amerigo Vespucci related how, blown off course and driven 500 miles south, he sighted a land which he named *Terra da Vista* [Land Seen], and which was possibly the Falklands or even Antarctica. In 1514, the year after the completion of the Piri Reis map, two Portuguese ships reported something similar,
as did two Dutch ships about the same time: also blown off course, they sighted land and named it Pressillgtlandt. Whatever land was sighted on these obscure voyages, the accounts prove one thing: there was no inherent impossibility in a 16th century ship getting a long way south.

There may, in fact, be an even simpler explanation of the presence of “Antarctica” on the Piri Reis map. To start with, as Charles Hapgood admits, about 900 miles of South American coastline are missing from the map: below the Rio de la Plata the coast simply turns eastward. And, interestingly, if this eastward section of coast is looked at vertically, that is, as continuing south instead of east, it does bear a remarkable resemblance to the actual east coast of South America from below Rio de la Plata down to Tierra del Fuego. Some of the smaller coastal features, moreover, conform with a modern map as well, and the small group of three islands (Ma de Sara) could then be identified as the Falkland Islands, and the wedge-shaped projection at the most easterly point of the line could correspond to the tip of South America.

To put it more simply, Piri Reis, or the scribe who copied his work, may have realized, as he came to the Rio de la Plata, that he was going to run off the edge of his valuable parchment if he continued south. So he did the logical thing and turned the coastline to the east, marking the turn with a semicircle of crenelations, so that he could fit the entire coastline on his page. If that was the case, then the elaborate Hapgood hypotheses of an ancient advanced civilization - or at least those elements based entirely on the Piri Reis map - would have no foundation whatever.

The Caribbean. This portion of the Piri Reis map is particularly important. In its northwest corner, for example, there is a large island labeled Hispaniola - today the home of Haiti and the Dominican Republic - which Columbus discovered on his first voyage and where he set up a colony, marked by the three towers on the map. Immediately below Hispaniola is Puerto Rico, and to the northeast is a group of 11 islands labeled Undizi Vergine [The Eleven Virgins]. The fact that this name is in a recognizable form of Italian, as opposed to Portuguese, is evidence, as Kahle pointed out, of its Columbian origin.

Further evidence is the fact that the map of the Caribbean area is so wildly inaccurate. As mentioned above, “Cuba”, grossly out of proportion to Brazil, for example, is oriented north-south rather than east-west. Most striking of all, it is almost identical to the conventional representations of Marco Polo’s Cipangu [Japan] on late medieval maps such as Behaim’s and Toscanelli’s. Why? Probably because Columbus was convinced, on his first voyage at least, that he had found the fabled Cipangu, and he may have drawn Hispaniola in this shape to support his claim.

An even more important argument for the Columbian origin of this part of the map is the fact that the real Cuba, as an island, is missing. And so it should be on a Columbian map, for Columbus thought Cuba was part of the mainland of Asia, and drew it accordingly. On Pirs Reis’ map, the wedge-shaped projection on the mainland opposite Hispaniola is almost certainly the eastern tip of Cuba; the southward-trending coast below is an attempt to draw Cuba as if it ran north and south—as Columbus believed it did. It is interesting that Behaim’s globe and other maps influenced by Marco Polo’s description of Cathay show a very similar wedge-shaped projection opposite the island of Cipangu; if Columbus thought he was off the coast of Asia he may have drawn the mainland this way to correspond to its then conventional representation.
Close studies of the Caribbean portion of the map confirm the idea that the map possesses all the important information that was on the map of Columbus drawn and sent to Europe in 1498 and also on the map of Toscanelli that Columbus had in hand when he first ventured out on his voyages (Book III, #252). This part of the map contains many imaginary islands with a picture of a parrot on each. The island of Trinidad is written as Kaletot, which probably is derived from a cape on this island that Columbus called Galera. Puerto Rico is named here San Juan Batichdo, and on its eastern coast is drawn the picture of a fortress. There is, however, another island to the west of Trinidad, again with a picture of a parrot near which is written San Juan Batichdo. Drawing various islands on the South American coast opposite Trinidad shows the influence of Columbus, who believed this newly discovered continent to be a group of islands.

The Piri Reis map may be unique in that it has Antilia as the name for both the western continent and the legendary island in the Atlantic on the same map. Presumably, this is because Piri Reis, in compiling his map, used both portolan charts of the 15th century, which typically show the island of Antilia in the Atlantic, and maps of the early 16th century, which name the western continent Antilia, as the Egerton MS 2S03, fol. 8r map has. The Piri Reis map is apparently the only map to give the name Antilia to both the legendary island and the western continent.

As has been shown, the place-name Antilia on the western continent is on that section of the Piri Reis map that is copied from a non-Columbian, post-1504 map. This further demonstrates the belief of many that Columbus failed to reach the Indies and instead sailed to the islands of Antilia.

The real Antilles are shown on the map not as islands, but as Columbus believed it to be, as a continent. Hence Piri Reis calls Central America “the County of Antilia”, and the North American coast “the coast of Antilia”. It is true that at a certain spot quite near the North American Coast there is marked an island called the Antilia, but evidently that stood for the legendary island popularly regarded as fabulously wealthy and prosperous at the time when Columbus first started on his voyages. It is to be noted, however, that beside the island is a note that states that, contrary to the common fallacy, the island is not prosperous. Cuba, too, is shown as a continent in accordance with Columbus’ firm belief. So confident was Columbus in this that while he was near the coast of Cuba in 1494 he had his conviction recorded by the notary public on the boat, Fernand Perez de Luna, and asked all the crew to sign it, as we can now see from the document signed on the 12th June, 1494, which declares that, since it is quite evident that this is a continent, thereafter whoever attempts to contradict this statement shall be fined to 10.00 Maravedis pieces and also his tongue shall be cut out. Undoubtedly the reason why Piri Reis, too, shows it as a continent was not because he was afraid for his tongue, but because he would not question the veracity of a piece of information given by such an authority as Columbus, who had been to those parts of the world several times. Cuba is shown as a continent also in the map of Columbus dated 1498, which formed the basis for Piri Reis later on; in the rough sketch drawn by Christopher Columbus’ brother, Bartholomew, in 1503 (#304), in the map of the world made by Ruysch in 1508 (#313), and even in the marine map by Waldeesmüller in 1507 (#310).

On the mainland that is Cuba and Central America are three inscriptions:

1. There is a kind of red dye called vakami that you do not observe at first because it is at a distance [illegible]. The mountains contain rich ores [illegible]. There some of the sheep have silken wool.
Vakami or bakkam is the Arabic word for logwood, dyewood, brazil, or brazilwood and the reddish dye made from the wood.

2. This country is inhabited. The entire population goes naked.

3. This region is known as the province of Antilia. It is in the west. They say that there are four kinds of parrots-white, red, green, and black. The people eat the flesh of parrots and their headdress is made entirely of parrots' wool [i.e., feathers]. There is a stone here. It looks like a black touchstone. The people use it instead of the ax. That it is very hard [illegible]. We saw that stone.

Part of the inscription on the mainland connecting Cuba with South America identifies the territory as Antilia. Many in Europe believed (correctly) that the circumference of the earth was larger than Columbus supposed, and the Portuguese particularly did not believe Columbus had sailed far enough west to have reached the Indies. They thought he had reached the legendary island of Antilia shown to the west in the Atlantic Ocean on medieval portolan charts (and so today the Caribbean islands are named the Antilles). In fact, the new lands to the west discovered in the late 15th and early 16th centuries were frequently identified with the legendary islands of the Atlantic-Antilia, Seven Cities, and Brasil.
Outline of a suggested reconstruction of the whole Piri Reis world map of 1513

Location of the existing fragment is shown in “shaded” area. The dotted-line enclosure shows the area mapped by Piri Reis’ second map.
Piri Reis calls the eleven islands on the southeast of Haiti “Undizi Vergine,” which shows that the number of the islands is not expressed by the word “once” which means eleven in Spanish but by its equivalent in Columbus’ mother tongue, Italian. This is another indication of how faithful Piri Reis was to Columbus’ map, keeping close to the information of Columbus’ map which apparently possessed all that was on the earlier Toscanelli map, Piri Reis handed down to us the oldest map of America and informed us about various aspects of the most important phase in the history of the discoveries. By recording the explanations given by the Spaniard who had taken part in the three expeditions of Columbus and was later captured by Kemal Reis, he related the story of these discoveries from an original source free from the later legendary tales that have grown about them.

Scattered about the map are some other entries that also enlighten us about various details in the discoveries. Beside the picture of a ship near the Azores is written that this Genoese vessel came from Flanders, was shipwrecked, and that the survivors discovered these islands. From another entry we learn that the sea there is the Western Sea, but the Europeans call it the Spanish Sea, and after the discoveries of Columbus the name is changed to Ovasana, i.e. “Ocean”.

By a picture near the island of Santiano is a note stating that the names of these places were found and given by a Genoese sailor brought up in Portugal. In another entry close to the picture of a ship drawn near the South American coast he summarizes all the information given in a map by Nikola di Juan who was shipwrecked there. In one of the
notes on the Atlantic Ocean he mentions the Treaty of Tordesillas, and a certain line that divides the Spanish and the Portuguese possessions.

Towards the north, on the map is a picture of a fish on which is drawn a woman and a man making a fire, nearby is another ship and three people in a boat. Again, this is the story of Saint Brendan that was very popular in the middle ages, and was recorded in the “thousand and one night” stories. But Piri Reis does not neglect to add that the legend comes down not from the Portuguese but from the old Mappa Mundi. This shows that the Turkish geographer made use of many sources and did not neglect the latest information nearest to his age, and that he was very careful about his bibliography.

The Piri Reis map of 1513 came to light in the old imperial palace at Istanbul in 1931. The Illustrated London News published a reproduction of it on 25th February 1932, which prompted a detailed letter by a prominent Turkish historian. The magazine published this letter by Yusuf Akura Bey, National Deputy and President of the Turkish Historical Society on 23rd July 1932, of which the following is an excerpt:

The map in question is drawn on a gazelle skin by Piri Reis who had made a name for himself among the Western and Eastern Scholars through his detailed geographical book on the Mediterranean Sea entitled Bahriye ["On the Sea"] and which testifies to his capacity and knowledge in his profession. Piri Reis is the son of the brother of the famous Kemal Reis who was the Turkish admiral in the Mediterranean Sea at the last quarter of the 15th century. History records Piri Reis Bey’s last official post as admiral of the Fleets in the Red Sea and the Indian Ocean. Piri Reis wrote and completed the above-mentioned map in the city of Gelibolu (Gallipoli) in the year 1513, and four years after this date, i.e., in the year 1517, he presented personally to Selim I, the conqueror of Egypt, during the presence of the latter there.

As the same thing will be noticed in the maps of ancient and mediaeval times, the map of Piri Reis contains important marginal notes regarding the history and the geographical conditions of some of the coasts and islands. All these marginal notes with hundreds of lines of explanation were written in Turkish. Three lines only, which from the title and head lines of the map, were written in Arabic; and this is done to comply with the usual traditional way which is noticed on all the Ottoman Turkish monuments up to the very latest centuries. These three lines in Arabic testify that the author is the nephew of Kemal Reis, and that the work was written and compiled in Gelibolu in the year 1513.

The map in our possession is a fragment and it was cut of from a world chart on large scale. When the photographic copy of the map is carefully examined, it will be noticed that the lines of the marginal noted [sic] on the eastern edges have been cut half away.

In one of these marginal notes the author states in detail the maps he had seen and studied in preparing his map. In the marginal note describing the Antilles Islands, he states that he has used Christopher Columbus’ chart for the coasts and islands. He sets forth the narratives of the voyages made, by a Spaniard a slave in the hands of Kemal Reis, Pin Reis’ uncle, who under Christopher Columbus made three voyages to America. He also states, in his marginal notes regarding the South American coast that he saw the charts of four
Portuguese discoverers. That he has made use of Christopher Columbus’ chart is made clear in the following lines of his:

“In order that these islands and their coasts might be known Columbus gave them these names and set it down on his chart. The coasts (the names of the coasts) and the islands are taken from the chart of Columbus”.

The work essentially was a world map. Therefore Piri Reis had made a study of some of the charts that represented the world, and according to his personal statement, he has studied and examined the maps prepared at the time of Alexander (the Great), the ‘Mappa Mundis’ and the eight maps in fragments prepared by the Muslims.

Piri Reis himself plainly explains, in one of the marginal notes in his map, how his map was prepared:

“This section explains the way the map was prepared. Such a map is not owned by anybody at this time, I, personally, drawn [sic] and prepared this map. In preparing this map, I made use of about twenty old charts and eight Mappa Mundis, i.e. of the charts called Jaferiye by the Arabs and prepared at the time of Alexander the Great and in which the whole inhabited world was shown; of the chart of [the] West Indies; and of the new maps made by four Portugueses [sic] containing the Indian and Chinese countries geometrically represented on them. I also studied the chart that Christopher Columbus drew for the West. Putting all these material [sic] together in a common scale I produced the present map. My map is as correct and dependable for the seven seas as are the charts that represent the seas of our countries”.

Piri Reis, in a special chapter in his book Bahriye mentions the fact that in drawing his map he has taken note of the cartographical traditions considered international at that time. The cities and citadels are indicated in red lines, the deserted places in black lines, the rugged and rocky places in black dots, the shores and sandy places in red dots and the hidden rocks by crosses.

There are in fact 207 charts drawn by Piri Reis in his Bahnye. The U.S. State Department, through their ambassador in Ankara, procured reproductions of the Piri Reis map for the Library of Congress. The Library of Congress was particularly anxious also to obtain a copy of Columbus’ maps upon which Piri Reis claimed in part to have based his own map. At that time, Columbus was popularly believed to have “discovered” America. It was not widely recognized fifty years ago that Columbus died in the belief that he had discovered Japan. Nor was it known in the 1930s that other maritime explorers from Europe had sailed the Atlantic centuries before Columbus.

We can see two rose-compasses one in the north and the other in the south. Each of the roses is divided into 32 parts and the division lines are extended beyond the rose frames. Each wind-rose is equal to one sea mile, as is shown in the measurements on the areas near the wind-roses.

In the capitals of Portugal, Marrakesh and Guinea, there are pictures of their respective sovereigns. Besides these, on Africa there are pictures of an elephant and of an ostrich, and on South America of llamas and pumas. On the oceans and along the coasts we see illustrations of ships. On both the lands and the seas there are entries
Chart of the Ocean Sea

sometimes relevant, sometimes irrelevant of the pictures. They are all written in Turkish, and can also be found in his book *Bahriye*. The map is 90/65 cm in size.

Detail of the east coast of South America and the Caribbean
In west Africa are shown rivers, lakes, mountains, cities, animals, and seated figures that are similarly shown on earlier *portolan* charts, such as that by Angelino Dulcert of 1339, the 1375 *Catalan Atlas* (#235), and that by Mecia (or Macian) de Viladestes of 1413. One of the two seated figures shown in west Africa is probably the king of Mali, Mansa Musa, who reigned from c. 1312 to 1337 and whose wealth so impressed Europeans that he was commonly depicted on *portolan* charts from the mid-1320s onward seated on a throne holding an orb and a scepter. Beside the depiction of him is the inscription *Padisah-i Kine* (ruler of Guinea). The other seated figure has next to it the inscription *Merakis padisah-i* (ruler of Marrakech).
This map seems to show the southern continent extending eastward from the southern tip of South America, and in that land there is an illustration of a large serpent, and a legend which runs: “This country is barren. Everything is desolate and in ruins and it is said that large these shores and these shores are said to be very hot.” Here the ends of the earth are a wasteland, which seems to have been inspired by ideas of the Torrid Zone.
There are 117 place-names on the map. Most of these are easily identifiable and were undoubtedly copied by Piri Reis from typical European-made portolan charts and portolan-style maps of his time. On the source maps, most of these place-names were originally written in European languages, such as Italian and Portuguese, although some in the western regions have Native American place-names, preserved by the Spanish. On the European source maps used by Piri Reis, these were written in the Roman or Latin alphabet. Piri Reis and his calligrapher transliterated these into the Arabic script on the map.

The following entry-notes begin from the northwest corner, turn southward, then proceed along the perimeter, and finally continuing in a winding fashion towards the center.

**The Legends on the Piri Reis Map**

(From “The Oldest Map of America” by Professor Dr. Afet Inan. Ankara 1954, pp. 28-34. The Roman numerals refer to the key map.)

I. There is a kind of red dye called *vakami*, that you do not observe at first, because it is at a distance... the mountains contain rich ores... There some of the sheep have silken wool.

II. This country is inhabited. The entire population goes naked.

III. This region is known as the *vilayet of Antilia*. It is on the side where the sun sets. They say that there are four kinds of parrots, white, red, green and black. The people eat the flesh of parrots and their headdress is made entirely of parrots' feathers. There is a stone here. It resembles black touchstone. The people use it instead of the ax. That it is very hard... [illegible]. He saw that stone.

[NOTE: Piri Reis writes in the *Bahriye*: “In the enemy ships which we captured in the Mediterranean, we found a headdress made of these parrot feathers, and also a stone resembling touchstone.”]

IV. This map was drawn by Piri Ibn Haji Mehmed, known as the nephew of Kemal Reis, in Gallipoli, in the month of *muharrem* of the year 919 (that is, between the 9th of March and the 7th of April of the year 1513).

V. This section tells how these shores and also these islands were found.

These coasts are named the shores of *Antilia*. They were discovered in the year 896 of the Arab calendar. But it is reported thus, that a Genoese infidel, his name was Colombo, he it was who discovered these places. For instance, a book fell into the hands of the said Colombo, and he found it said in this book that at the end of the Western Sea [Atlantic] that is, on its western side, there were coasts and islands and all kinds of metals and also precious stones. The above-mentioned, having studied this book thoroughly, explained these matters one by one to the great of Genoa and said: “Come, give me two ships, let me go and find these places.” They said: “O unprofitable man, can an end or a limit be found to the Western Sea? Its vapor is full of darkness.” The above-mentioned Colombo saw that no help was forthcoming from the Genoese, he sped forth, went to the Bay of Spain [king], and told his tale in detail. They too answered like the Genoese. In brief Colombo petitioned these people for a long time, finally the Bay of Spain gave him two ships, saw that they were well equipped, and said: “O Colombo, if it happens as you say, let us make you kapudan [admiral] to that country.” Having said which he sent the said Colombo to the Western Sea. The late Gazi Kemal had a Spanish slave. The above-mentioned slave said to Kemal Reis, he had been three times to that land with Colombo. He said: “First we reached the Strait of Gibraltar, then from there straight south and west between the two... [illegible]. Having advanced straight four thousand miles, we saw an island facing us, but gradually the waves of the sea became foamless, that is, the sea was becalmed and the North Star—the seamen on their
compasses still say star—little by little was veiled and became invisible, and he also said that the stars in that region are not arranged as here. They are seen in a different arrangement. They anchored at the island which they had seen earlier across the way, the population of the island came, shot arrows at them and did not allow them to land and ask for information. The males and the females shot hand arrows. The tips of these arrows were made of fish bones, and the whole population went naked and also very ... [illegible]. Seeing that they could not land on that island; they crossed to the other side of the island, they saw a boat. On seeing them, the boat fled and they [the people in the boat] dashed out on land. They [the Spaniards] took the boat. They saw that inside of it there was human flesh. It happened that these people were of that nation which went from island to island hunting men and eating them. They said Colombo saw yet another island, they neared it, they saw that on that island there were great snakes. They avoided landing on this island and remained there seventeen days. The people of this island saw that no harm came to them from this boat, they caught fish and brought it to them in their small ship's boat [filika]. These [Spaniards] were pleased and gave them glass beads. It appears that he [Colombo] had read—in the book that in that region glass beads were valued. Seeing the beads they brought still more fish. These [Spaniards] always gave them glass beads. One day they saw gold around the arm of a woman, they took the gold and gave her beads. They said to them, to bring more gold, we will give you more beads, [they said]. They went and brought them much gold. It appears that in their mountains there were gold mines. One day, also, they saw pearls in the hands of one person. They saw them when; they gave beads, many more pearls were brought to them. Pearls were found on the shore of this island, in a spot one or two fathoms deep. And also loading their ship with many logwood trees and taking two natives along, they carried them within that year to the Bey of Spain. But the said Colombo, not knowing the language of these people, they traded by signs, and after this trip the Bey of Spain sent priests and barley, taught the natives how to sow and reap and converted them to his own religion. They had no religion of any sort. They walked naked and lay there like animals. Now these regions have been opened to all and have become famous. The names which mark the places on the said islands and coasts were given by Colombo, that these places may be known by them. And also Colombo was a great astronomer. The coasts and island on this map are taken from Colombo's map.

VI. This section shows in what way this map was drawn. In this century there is no map like this map in anyone's possession. The hand of this poor man has drawn it and now it is constructed. From about twenty charts and Mappae Mundi, these are charts drawn in the days of Alexander, Lord of the Two Horns, which show the inhabited quarter of the world; the Arabs name these maps Jaferije—from eight Jaferiyes of that kind and one Arabic map of Hind, and from the maps just drawn by four Portuguese which show the countries of Hind, Sind and China geometrically drawn, and also from a map drawn by Colombo in the western region I have extracted it. By reducing all these maps to one scale this final form was arrived at. So that the present map is as correct and reliable for the Seven Seas as the map of these our countries is considered correct and reliable by seamen.

VII. It is related by the Portuguese infidel that in this spot night and day are at their shortest of two hours, at their longest of twenty two hours. But the day is very warm and in the night there is much dew.

VIII. On the way to the village of Hind a Portuguese ship encountered a contrary wind [blowing] from the shore. The wind from the shore . . . [illegible] it [the ship]. After being driven by a storm in a southern direction they saw a shore opposite them they advanced towards it [illegible]. They saw that these places are good anchorages. They threw anchor and went to the shore in boats. They saw people walking, all of them naked. But they shot arrows, their tips made of fishbone. They stayed there eight days. They traded with these people by signs. That barge saw these lands and wrote about them which.... The said barge without going to Hind, returned to Portugal, where, upon arrival gave information.... They
described these shores in detail... They have discovered them.

IX. And in this country it seems that there are white-haired monsters in this shape, and also six-horned oxen. The Portuguese infidels have written it in their maps....

X. This country is a waste. Everything is in ruin and it is said that large snakes are found here. For this reason the Portuguese infidels did not land on these shores and these are also said to be very hot.

XI. And these four ships are Portuguese ships. Their shape is written down. They traveled from the western land to the point of Abyssinia [Habesh] in order to reach India. They said towards Shuluk. The distance across this gulf is 4200 miles.

XII. ... on this shore a tower ... is however ... in this climate gold . . . taking a rope ... is said they measured

[NOTE: The fact that half of each of these lines is missing is the clearest proof of the map’s having been torn in two.]

XIII. And a Genoese kuke [a type of ship] coming from Flanders was caught in a storm. Impelled by the storm it came upon these islands, and in this manner these islands became known.

XIV. It is said that in ancient times a priest by the name of Sanvolrandan (Santo Brandan) travelled on the Seven Seas, so they say. The above-mentioned landed on this fish. They thought it dry land and lit a fire upon this fish, when the fish’s back began to burn it plunged into the sea, they re-embarked in their boats and fled to the ship. This event is not mentioned by the Portuguese infidels. It is taken from the ancient Mappae Mundi.

XV. To these small islands they have given the name of Undizi Vergine. That is to say the “Eleven Virgins”.

XVI. And this island they call the Island of Antilia. There are many monsters and parrots and much logwood. It is not inhabited.

XVII. This barge was driven upon these shores by a storm and remained where it fell.... Its name was Nicola di Giuvan. On his map it is written that these rivers that can be seen have for the most part gold [in their beds]. When the water has gone they collected much gold [dust] from the sand. On their map....

XVIII. This is the barge from Portugal that encountered a storm and came to this land. The details are written on the edge of this map. [NOTE: see VIII.]

XIX. The Portuguese infidels do not go west of here. All that side belongs entirely to Spain. They have made an agreement that [a line] two thousand miles to the western side of the Strait of Gibraltar should be taken as a boundary. The Portuguese do not cross to that side but the Hind side and the southern side belongs to the Portuguese.

XX. And this caravel having encountered a storm was driven upon this island. Its name was Nicola Giuvan. And on this island there are many oxen with one horn. For this reason they call this island Isle de Vacca, which means, “Ox Island”.

XXI. The admiral of this caravel is named Messir Anton the Genoese, but he grew up in Portugal. One day the above-mentioned caravel encountered a storm, it was driven upon this island. He found much ginger here and has written about these islands.

XXII. This sea is called the Western Sea, but the Frank sailors call it the Mare d’Espagna. Which means the Sea of Spain. Up to now it was known by these names, but Colombo, who opened up this sea and made these islands known, and also the Portuguese, infidels who have opened up the region of Hind have agreed together to give this sea a new name. They have given it the name of Ovo Sano [Oceano] that is to say, sound egg. Before this it was thought that the sea had no end or limit, that at its other end was darkness. Now they have seen that this sea is girded by a coast, because it is like a lake, they have called it Ovo Sano.

XXIII. In this spot there are oxen with one horn, and also monsters in this shape.

XXIV. These monsters are seven spans long. Between their eyes there is a distance of one span. But they are harmless souls.
Fifteen years after this first map, Piri Reis drew a second one, again at Gelibolu. Like the previous one it bears his signature. Unfortunately today we have only a small portion of it, i.e., a small portion of the western hemisphere. It is 68/69 centimeters in size. Ornamental figures are drawn in the margins and most of it is in color.

There we find the northern part of the Atlantic Ocean and the newly discovered regions of North and Central America. There are four wind-roses on it. The Tropic of Cancer is shown here, though it was not on the first map. There are also scales of miles on it, each with twenty divisions. From the notes beside them we gather that the
distance between the divisions stand for 50 miles, and that between two dots for 10 miles. The scales here are bigger than in the previous one. We see Greenland in the north and the Azores towards the south. Some of the latter bear the names San Mikal, Santa Mariya, Eurik, and San Jorjo. To the south of Greenland two large pieces of land are shown; the one in the north is called Baccalao. On the map there is a note saying that Baccalao was discovered by the Portuguese. In another note further down near Terra Nova he says that though these coasts were discovered by the Portuguese, all is not known as yet, and only the parts that have been discovered are shown on the map.

Further south still one can see the peninsula of Florida drawn very much as we know it today. He calls it San Juan Batisto. The name was first given to Puerto Rico on the previous map.

The pieces of land seen at the side are the peninsulas of Honduras and Yucatan, discovered in 1517 and 1519 respectively. Unlike the first map, drawn under the influence of Columbus, the islands of Cuba, Haiti, the Bahamas and the Antilles are drawn quite accurately. One can read the words Is! di Vana over Cuba. Although there are numerous names along the coast of Venezuela, very few can be read. Among the legible words are San Cilorni, Monte Krago, Detonos, Die Sagram, Ponte Sogon, Didas and Sare.

In this second map the drawing of the coastlines shows greater improvement in technique and also close resemblance to the modern conception of these areas. The stony and rocky sections are given special care. There is, however, a slight distortion in the map from the true position of the continent as we know it today. This error was committed, due to neglect in not taking into consideration the ten to thirteen degrees of difference in angle on the contemporary compass. This error is to be observed in all the contemporary maps without any exception.

On this map, as on the previous one, there are some explanatory notes, but they are recorded more briefly. The note on the left-hand corner of the map, under the scales with the long and ornamental points, gives the signature of the author as well as the date 1528 (A. H. 935). Beside the measurements there is a note indicating the mileage, where he says that the distance between two sections is 50 miles and between two dots 10 miles.

Over the second set of scales further north he says again that the distance between two sections is 50 miles and between two dots 10. The idea in the two statements is the same but one or two words differ.

Beside place-names in the notes near Labrador he says “This is Baccalao, The Portuguese infidels discovered it. All that is known about it is recorded here”. From the position on the map we understand that these coasts are of “Terra Nova”. Today we know that the Portuguese explorer, Gaspar Corte-Real, discovered Terra Nova in 1500, and his brother, Miguel Corte Real, a year later in 1501, discovered Labrador.

Though part of the note over Central America is damaged what remains is quite interesting. “Dividing the land... to find where the sea begins... the vilayet that... beyond which”, can be read. Here there is a reference to an explorer who planned to cross overland to reach the ocean. It is quite possible that Piri meant by that Balboa who crossed Central America and reached the Pacific Ocean in 1513.

Another interesting term used on the map is what he calls the tropics: “Day’s Lengthening”. In his own words the explanation runs as follows: “Bu hat gun gayet uzadigi yere isaret tir” which means that these lines indicate the part of the world where the days grow longer.
The line drawn over Cuba should, of course have been drawn further north, and
the peninsula of Yucatan should have been put entirely below it; but that much accuracy
could not be expected of the cartographical technique of the period.

Such technical errors can be observed also in other contemporary maps. We
should, therefore, acknowledge the greatness and value of the work among other maps
of the period after pointing out briefly to its various merits and demerits.

As it can be easily observed from this map, Piri Reis continued following the new
discoveries with great interest. It is remarkable that, by taking into account the results of
the new discoveries, he should correct in this map the inaccuracies of the first in which
he was misled through his unquestioning confidence in Columbus’ map. In this second
map Piri Reis showed only the parts of the world that had been already discovered and
left the unexplored areas blank, explaining this by the fact that they were as yet
unknown. Thus, Piri proved, once again, how he observed the principles of scientific
methods in drawing this map.

The missing portion: Turning now to the missing eastern portion of his map, what may
we deduce about it? In both Inscription nos. 6 and 14, Piri mentions the Seven Seas. In his
Kitab-ı Bahriye he identifies these Seven Seas, which gives us an excellent idea of what he
might have drawn on the missing portion of his world map. The Seven Seas named by
Piri are: the Western Sea (the Atlantic Ocean and Mediterranean Sea), the Caspian Sea,
the Indian Ocean, the Persian Gulf, the Red Sea, the Zanj Sea (the Sea of the Blacks, the
arm of the Indian Ocean formed by the Mozambique Channel and western Indian Ocean
along the coast of East Africa south of Zanzibar), and the Chinese Sea. We can be almost
certain, based upon the presumed size of his world map, as originally drawn, that his
map showed the breadth of lands and seas from the shores of Panama in Central
America eastward to the islands of Indonesia, Taiwan, and Japan, and all the lands and
seas from Scandinavia in the north to the mythical Southern Continent south of the Cape
of Good Hope. His map was one of the first to show the world-encompassing Ocean, not
as a fearful barrier to travel, but as a highway to the other parts of the world to be
exploited.

Arab and Persian navigators and merchants had been sailing from the Red Sea
and the Persian Gulf to China for centuries and this information certainly would have
been of use to Piri. Of course, and charts, similar to the Cantino planisphere (#306) and
those by Pedro and Jorge Reinel, would have provided additional source material. Piri
clearly states in Inscription no. 6 that he used recent Portuguese maps of India. We must
presume these maps, depicting the sailing route of the Portuguese to the spice markets
of Malabar, especially that of Calicut, showed at the minimum the Indian Ocean from
the Cape of Good Hope to Cape Comorin and the Bay of Bengal, and these Portuguese
maps probably included the coastal lands further east as far China, learned by hearsay,
as we see on the Cantino planisphere. Some noticeably curious features of Portuguese
maps of the early 16th century, however, were the increased longitudinal width of Africa,
the consequential increased length of the Red Sea, the regressive or retrograde Ptolemaic
image of the Persian Gulf, and the resulting misshapen Arabian Peninsula. The Cantino
planisphere has these errors, as do the many maps that followed derived from it.
Perhaps Piri copied these gross geographical errors into his map. He was, after all,
striving for the most up-to-date and accurate information and he did consider the
Portuguese maps to be important sources for geographical information.
Piri, as with most other cartographers, Muslim and Frankish, probably gave extra consideration to the authority of Ptolemy in his geographical representations. It is conceivable Piri continued to include some of the traditional Ptolemaic place-names, such as Cattigara, in addition to accepting geographical ideas and place-names used on Portuguese and Arab maps. With these considerations in mind, we can suggest some of the place-names on the eastern two-thirds of his world map.

While most Frankish cartographers were copyists, Piri Reis was an innovator by compiling a map on a global perspective. Throughout his life-long career at sea, Piri Reis continued updating his geographical and maritime knowledge and sharing it through his maps and writings with the Ottoman Navy and the Turkish people.

Another theory put forth by Robert Bywater and Jean-Pierre Lacroix explores the fact that Piri Reis based his depiction of the western new discoveries on the perceptions of Columbus and his insistence on having reached Asia. They conclude that the western area of the 1513 map does not depict shorelines of the Caribbean but depicts the shorelines of East and Southeast Asia when sea-level was lower during the late Pleistocene and early Holocene. In this regard they suggest that Hapgood was partly on the right track when he suggested that some source maps were very ancient.

Furthermore, they believe it is possible that the source maps were of Turkish origin. If the source maps were from Columbus, they are not only the result of his sailing. It is more likely that they were charts that had inspired him and underpinned his conviction that he had reached Asia.

They admit that the original source map came is pure speculation. Developed upper Paleolithic cultures are known to have been present in East Asia and others have suggested the presence in Asia or Southeast Asia of cultures with technical expertise. As a late Pleistocene maritime civilization is indicated however, much of its archaeology would be now submerged. A gouge used for boat-making and hence sea-faring capability has however, been recovered from an upper Paleolithic site on Kyushu and dated at 13,000 B.P. and the Incipient Jomons were known to have mastered pottery earlier than this date. Were the Incipient Jomons the originators of the original source maps?
Features and some selected islands depicted in the northwest part of the map. Inset: island Antilia with neighboring island (from Bywater & Lacroix)

**Conclusion:** It can be shown that the Piri Reis map of 1513 may be one of the most important maps of the time to have survived because it probably does contain a copy of a map made by Columbus, or under his supervision, not in 1498, as previously supposed, but two or three years earlier. Piri Reis’s manuscript transcends the idea of a map to become a beautiful work of art and cultural icon built upon an encyclopedic, comprehensive, and vast, though embryonic, scientific knowledge, including physical geography, mineralogy, botany, zoology, anthropology, ethnography, and oceanography, coupled with a seeming familiarity with Arabic and Turkish literature,
and based upon the latest geographical and cartographic information from the Portuguese, Spanish, Italians, Arabs, and, apparently, the Javanese and others in East Asia. The blending, fusing, and harmonizing by Piri Reis of ancient legends, medieval literature, and renaissance nautical science has created an enduring symbol of the integration of two of the world’s great civilizations — the Latin Franks and the Ottoman Turks. The Piri Reis map is a distinguished work of cartographic science, an important historical artifact, and one of the world’s great multicultural and intercultural unions of art and science. Piri Reis himself stands as an exceptional individual straddling the geographical and cultural borderlands between East and West, the Medieval and the Renaissance, and the Old and the New. To quote McIntosh, “The Piri Reis map displays the earliest, most primitive, and most rudimentary cartography of these islands, more primitive than even the celebrated Juan de la Cosa map, a primitiveness which indicates that the earliest of all cartographic records of the discoveries in the New World; a map made by Christopher Columbus or under his supervision about 1495 or 1496, is preserved in the Piri Reis map of 1513”.

**Location:** Topkapi Saray Museum, Istanbul

**Size:** 2 ft. 11.5 in. x 2 ft. 3 in. (90 x 63 cm)

**References:**
*Bywater, Robert and Jean-Pierre Lacroix, “East Asian Shorelines on the Piri Reis map of AH 919 (AD 1513)”, 2004
*Brotton, J., Great Maps, pp. 90-93.
*Ferrar, M. “ChPIR/1: Piri Reis, His Works from 1513 to 1528 Cartographer and Mathematician”, 2020.
*George, W., Animals and Maps, pp. 60-62, Figure 3.2.
*Hapgood, C.H., Maps of the Ancient Sea Kings, pp. 4-68.
*Wolff, H., America, Early Maps of the New World, p. 43, #62.

*illustrated
Modern identifications of features in the Eastern Atlantic on the Piri Reis map
Close to the bottom of Piri Reis map there is an archipelago featuring a larger island called "il de Sare". Among those islands is written "Buadalar issizdir, ama bahar coktur", that is "Those islands are deserted but spring here lasts long". It could be a primitive representation of Falkland/Malvinas islands (the larger of which is called Soledad). It may seem quite odd, as the small archipelago was "officially" discovered in 1592. But a group of islands in the same location can be seen on the Circolus Antarticus chart by Pedro Reinel, dated 1522 (Istambul, Topkapi Museum Library). South America in the Circolus Antarticus chart by Pedro Reinel, 1522 Also shown here is the giant snake with the inscription “In this country there is no trace of cultivation. All is desolate and big snakes are said to be there. For this reason the Portuguese infidels are said not to have disembarked on the shore and even many...[illegible] are said to be there.(Istambul, Topkapi Museum Library).

Below are excerpts from the Illuminated Manuscript, Oval Map of the World, from Book on Navigation, Walters Art Museum Ms. W.658, fol.23b. Originally composed in 932 AH / 1525 CE and dedicated to Sultan Süleyman I, The Magnificent, this great work by Piri Reis (d. 962 AH / 1555 CE) on navigation was later revised and expanded. The present manuscript, made mostly in the late 11th AH / 17th CE century, is based on the later expanded version with some 240 exquisitely executed maps and portolan charts. They include a world map (fol.41a) with the outline of the Americas, as well as coastlines (bays, capes, peninsulas), islands, mountains and cities of the Mediterranean basin and the Black Sea. The work starts with the description of the coastline of Anatolia and the islands of the Aegean Sea, the Peloponnesian peninsula and eastern and western coasts of the Adriatic Sea. It then proceeds to describe the western shores of Italy, southern France, Spain, North Africa, Palestine, Israel, Lebanon, Syria, western Anatolia, various islands north of Crete, Sea of Marmara, Bosporus and the Black Sea. It ends with a map of the shores of the Caspian Sea (fol.374a). See this manuscript page-by-page at the Walters Art Museum website: art.thewalters.org/viewwoa.aspx?id=19195
World Map, 34 x 24 cm (W.658.23B)
World map, 34 x 24 cm (W.658.41A)
The city of Cairo, Egypt, 34 x 24 cm (W.658.305A)