

In the Royal Library of the Monastery of El Escorial (Spain) there is a manuscript inventoried with the number Ms. árabe 1636, containing a medieval Islamic world map (12th century), unpublished and not studied, which presents several peculiar characteristics, and especially, a water inlet on the west coast of Africa that it could be a representation of the Gulf of Guinea, three centuries before its exploration and discovery by the Portuguese. To complete its description, the representation of the African west coast in ancient cartography is shown. The work is a miscellaneous manuscript, composed of two works. The first is a treatise on alchemy (1636) and the second is the work that interests us (1636). It is called *Kitab al-madd wa l'yazr* [Book on the ebb and flow], and includes folios 100 to 117v, that is, 18 folios. It is a geographical treatise on the tides, written in Seville during the time of Muslim domination, and dated on folio 117 in the *safar* month of the year 588 of the *Hegira*, date corresponding to the month of February 1192, although, as Leonor Martinez Martin says - author of an excellent monograph on this manuscript - it is difficult to decide, for lack of other data, whether this date is the composition of the work or the date in which a copy was written. The manuscript is a cosmographic work divided into 30 chapters with the description of the sky, the globe and the Nile, as well as with both astronomical and geographical figures, and adds that its author is Abu Ali Alzeiat, although there is little or no documentation to substantiate his authorship.

Of the 30 short chapters, the one that interests us is chapter 24, entitled "About what is said about the seas that come out of the ocean and what comes from the ebb and flow", because it refers to the geography of the earth and the world map. In the translation by Leonor Martinez Martin:

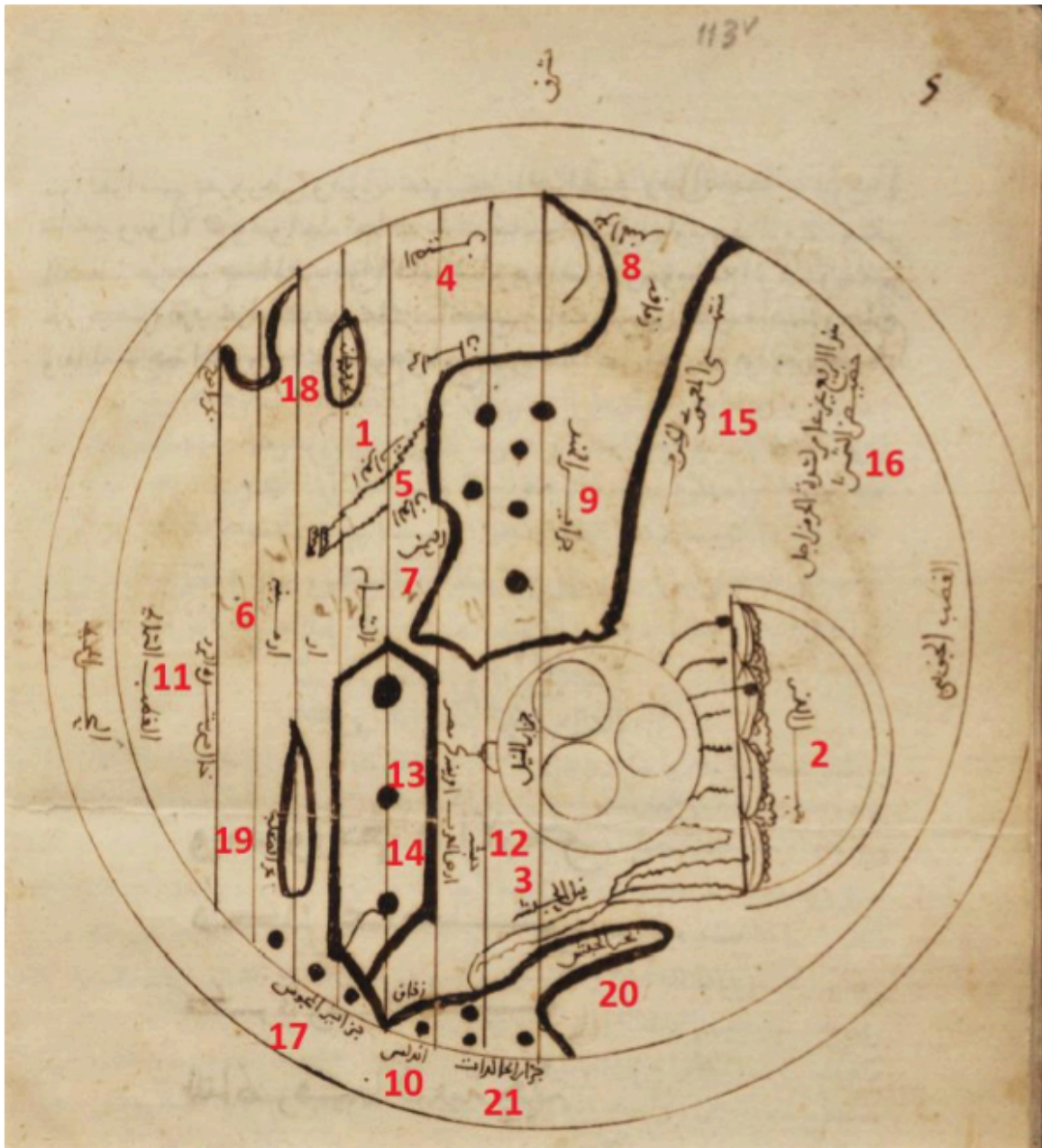
- *Six are the great outgoing seas of the ocean: three from the eastern region and three from the western one.*
- *The sea of India (Indian Ocean) leaves the eastern region, in the southern quadrant... and is the largest of these seas and the richest in straits ... In it there are all the islands of India and there also flow the Tigris and the Euphrates... In this sea is the mouth of the Indus, by which the annual flow rises as it rises through the Nile of Egypt...*
- *From this Indian Ocean another gulf (Red Sea) passes between the region of Abyssinia and the land of Yemen... This sea reaches the vicinity of Mecca... Between this gulf and what unites with the Indian Ocean, which reaches the lowest part of Basra, is the heart of the country of the Arabs...*
- *This great sea is opposed in the western region by another sea [Mediterranean Sea] that leaves the ocean in the western part of the country of Sudan, which ends in the vicinity of the Mountains of the Moon and in it are the mouth of the Nile of Egypt, the fertile islands of Sicily and Mallorca and others... Its length is 6,000 miles and its width is almost 400.*
- *On the east it is opposed by the sea called Yurian (Caspian Sea) which is said not to join with the ocean...*
- *The Baltic Sea leaves the western region... It has many straits and in its lower part there are many islands known as the Islands of the Magi [Name in ancient documents attributed to the Scandinavian countries]...*
- *Facing the eastern region is the sea of Gog and Magog (Sea of China)...*
- *The geography of the Earth has been drawn by means of two different images, of round and flat shape, so that you can see clearly the way in which the ebb and flow behave and its particularities with respect to the ocean and where ends the monthly flow of these seas, where is the end of that sea and its limits...*

The World Map. The images mentioned in the text are those that appear in the figure below which can be found in folios 114r and 113v. The manuscript includes figures, both geographic and astronomical, but without specifying that any of them could be a world map. The author who identified it was the prestigious arabist Juan Vernet Ginés, and his reference was collected by Leonor Martinez, and later by Ricardo Cerezo, but none of them included an image. In addition, the reference of Ginés is limited to verify its existence (although with the important data of the possible constancy of the Gulf of Guinea), and I do not know other authors who have cited it. It is, therefore, an unpublished and unstudied world map, and this is the first time it is shown and described.



Ms. 1636-2. Folios 114r y 113v

Of the two images, the most important is the one found in folio 113v , which shows a world map and the surrounding ocean, with the cardinal point East at the top. It is very schematic, little more than a sketch, because its purpose was not to present a geographical image of the world but to serve as an auxiliary tool of the text, to "clearly see the way to behave the ebb and flow", and for this reason the two legends of the lower part do not contain geographic data but describe the tides, in the seas and in the rivers. But it has two peculiarities that are obvious. One, which is oriented to the East instead of the south, which is the usual in Islamic maps. And another, which draws the climatic zones in the northern hemisphere as in a Macrobian map (#201). Both are undoubtedly due to the influence of the Christian cartography and cosmography, particularly Isidore (#205) and Macrobius (#201), to which the author would have had easy access because of his location in al-Andalus.



Ms 1636-2. World map. Folio 113v

Despite its schematize, its continental configuration is easily recognized. In the north (left) the Eurasian continent, separated from the African by the Indian Ocean and the Mediterranean Sea, both with islands represented by points. None is labeled, but the three usual islands of the Mediterranean in Islamic cartography are Cyprus, Crete and Sicily. Two rivers flow into the Indian Ocean, although only one of them is named, the Euphrates (1). In the Mediterranean flows the Nile, with its traditional source in the *Mounts of the Moon* (2), a toponym that comes from Ptolemy. There is also a source in Mauritania, where the legend Nile of Ethiopia appears (3), which ends where the south-north branch of the Nile is born. This double branch is usual in medieval maps, following the description of Orosius taken from Pliny. The drawing of the *Mounts of the*

Moon, from which the waters that are concentrated in large lakes flow before its final course, is a design that appears in almost all the medieval Islamic maps from al-Khwarizmi, (9th century). Here it is oversized, no doubt because of the importance given in the manuscript to the floods of the Nile. There are some geographical toponyms. In Asia there are, for example, China (4), Iraq (5), Armenia (6), Yemen (7) and the Sea of India (8) and in its interior, the Islands of India (9). In Europe, al-Andalus (10), displaced from its correct place, and in the upper part North Pole (11). In Africa we see Ethiopia (12), Tunisia (13) and Land of Maghreb (14). In the extreme east of Africa there is a legend that says: *End of inhabited territory* (15) and to the south another that says: *This territory is not populated by excess heat* (16), reference to the torrid equatorial zone, considered uninhabitable and impassable, belief of Macrobian provenance but with a precedent in Crates de Malos (2nd century BC #113).



The River Nile and the Mountains of the Moon by Al-Khwarizmi. Kitab surat al-ard, dated in 833. Copy c. 1037. Bibliotheque Nationale et Universitaire de Strasbourg. Cod. 4247.

An interesting element is the reference to the *Sea of the Magi* (17). Here the islands of the Magi are associated with the Baltic Sea and Scandinavia. Therefore, this legend places these regions in a vague north of Europe. In Asia, in a closed sea, the legend says *Gurgan Sea* (18), which is the name of a city in Iran (now Gorgan) next to the Caspian Sea, conquered by Muslims in the 8th century. Therefore, the closed sea must be the Caspian, although in the translation of Chapter 24 of the manuscript, made by Leonor Martinez, this sea appears with the name of *Yurian*, a place name from which we have not found any trace. The fact that the Caspian Sea appears as an inland sea is a common

feature from the oldest Islamic cartography, like Ptolemy and unlike medieval Christian cartography, which drew it for centuries connected to the ocean. Probably the first time it was drawn as a closed sea was on the world map of Pietro Vesconte from 1320-1321, incorporated into the *Liber Secretorum* by Marino Sanuto (#228). Now, if that closed sea is the Caspian Sea, we have to ask ourselves what is the nearby water inlet connected to the ocean. The legend could not be identified by the translator, so we ignore its meaning. Only speculatively we can say that by influence of Christian cartography, the Caspian Sea may be represented by duplicate. The duplication of a topographic element (with the same or different place name) when the cartographer had doubts, is not completely exceptional. There are several cases in medieval cartography. The island of *Thule* is duplicated on the map of *Hereford* (#226), where *ysland* and *tyle* coexist. The Caspian Sea appears duplicated on the world map of Pietro Vesconte of 1320/1321 (#228) and in a version of his contemporary Paolinus Venetus. And there are also cases of duplicated rivers, for example, in the Beato de Gerona (10th century #207.6).

Another element of difficult interpretation is the large closed sea located north of the Mediterranean. The legend says *Sea of the Slavs* (19), but this does not clarify too much. Slavs is a generic term that groups different peoples that have occupied in historical times a territory that extends from the Baltic Sea to the Black Sea, but in no case to the north of the Mediterranean. Its proximity to the legend of the *Sea of the Magi*, associated with Scandinavia, considered as a group of islands, allows us to imagine that this closed sea is the Baltic sea, located in a higher climatic zone and next to the representative points of the *Islands of the Magi*, mentioned next to said sea in the text of Chapter 24.

Finally, we should look at the enigmatic curved line that starts from al-Andalus and reaches an island in the Mediterranean, for which there is no explanatory legend. Perhaps we can see an indication of its meaning in the lower text of the folio, which explains the tides: *where the monthly tide of these seas ends, there is the end of that sea and its edge ... and when it reaches the limit of its filling begins to lower the tide* Perhaps that line represents the limit of the entrance of the tide of the Atlantic in the Mediterranean or its currents, but, naturally, this is purely speculative.

Undoubtedly the most important and innovative feature of the map is the huge water inlet on the west coast of Africa, which is emphasized in such a simple and schematic map, and that can be easily interpreted as a large gulf, perhaps the Gulf of Guinea. The legend of the map says the *Sea of Ethiopia* (20), south of the Nile of Ethiopia (3), and the legend in the Atlantic says *Fortunate Islands* (21). Certainly, it is not the first time that large water entrants appear in medieval maps on the west coast of Africa. The first antecedent is the map of Cosmas Indicopleustes, in its *Topographia Christiana*, composed around 557 (#202), which shows two long and narrow entrants, without any labeling. And we find it also in three Beatus (#207), more or less contemporaries of the map of El Escorial. In the *Beatus of El Burgo de Osmá*, 1086 (#207.14), a gulf appears with the label *sinus* (gulf). In the *Beatus of Saint-Sever* (#207.13), from the end of the 11th century, there are two water inlets, although, as suggested by Sandra Sáenz-López, being its form identical to the two mountains of the *Beatus of El Burgo of Osmá*, the same element of a common map may have been identified as mountains in one and as gulfs in another. And in the *Beatus of Milan* (#207.26), from the late 12th century there is also a large water entrant with the label *sinus*. In the nautical charts, the first that draws a gulf on the western coast of Africa is that of Giovanni da Carignano, from the beginning of the 14th century, but without ruling out that the Genoese navigators went further, the

probable, by the toponymy used, is that it is one of the great bays (perhaps the one that forms Cape Blanco) that are in the “region of gold” visited by the Genoese merchants, in the current Mauritania and Senegal.



Two unnamed gulfs on the map of Cosmas Indicopleustes. Vat. Gr. 699, folio 40v (#202)

It is not known what the sources of information could have been. In the opinion of Sandra Sáenz-López Pérez, the coincidence of this representation in the Byzantine map of Cosmas and in the western ones allows us to propose the existence of a common origin undoubtedly derived from Roman antiquity, which should have its repercussion in the cartography, and from here be transmitted to the medieval maps. The only important map of Roman times that we know about is the map of Agrippa (#118), and there is not enough data to know precisely its design of the African coast. However, interestingly, in the reconstruction of the Agrippa map that the independent researcher Doug Fischer affirmed, in 2010, having identified, two gulfs appear on the west coast of Africa similar to those of the Beatus. Likewise, the *Anglo-Saxon* or *Cottonian* map (#210) of the 11th century, which according to several authors derives from a Roman map descended from the map of Agrippa, probably updated, and now lost, draws the west coast of Africa with several large gulfs.

The probable conclusions that can be deduced from all the exposed are the following. In the first place, the representation of the gulfs in the map of Cosmas and, above all, in the Beatus ones, can hardly be identified with the Gulf of Guinea, although it cannot be ruled out that Muslim expeditions of the 11th or 12th centuries have reached their latitude. And second, that the tracing of the gulf on the African coast on the map of El Escorial is much more than just a simple entrant water. It is a decided line that draws without doubt a great gulf, which is very likely the Gulf of Guinea, although there is nothing in the geographical description in the manuscript in the Chapter 24 that refers to this detail. If this conclusion is accepted, we find the first representation of the Gulf of Guinea on a medieval map, although its first clearly recognizable representation will not

reach until the 14th century. The conclusion drawn by Deleito is important because it anticipates in several centuries the exploration of the central coast of Africa, near the equator. The only author who has recognized him is Juan Vernet Ginés. He says in his 1953 work that this map, although very schematic, presents the peculiarity of showing for the first time the Gulf of Guinea on its northern coast, as the southern coast is fantastic and is undoubtedly due to old legends. And in his 1971 work he insists on the likelihood that medieval Muslim navigations reached the Gulf of Guinea. His opinion is collected by the only two authors who quote him on this issue; the ones already mentioned Leonor Martinez Martin and Ricardo Cerezo. And there are not others who have taken care of it, the map of El Escorial is pending a research work by specialists.



*The gulf labeled Sinus on the west coast of Africa on the Beatus of El Burgo of Osma
Ms. Cod. 1 (#207.14)*



The west coast of Africa on the Beatus of Saint-Sever. Ms Lat. 8878 (#207.13)



The west coast of Africa on the Beatus of Milan, Ms F. 105. Sup (#207.26)



Unnamed gulfs on the west coast of Africa on the Anglo-Saxon/Cottonian map (#210}

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