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## Spices in maps. Fifth centenary of the first circumnavigation of the world

*Keywords:* Spices, circumnavigation, centenary, Magellan, Elcano

*Summary:* The first circumnavigation of the world, promoted and initially commanded by Ferdinand Magellan and finished under Juan Sebastian Elcano's command, is considered the greatest feat in the history of explorations. The fifth centenary of this voyage (1519-1522) has brought again into light the true objective of the expedition: to reach the Spice Islands, the source of some of the most expensive goods in the sixteenth century. The interest on spices can be traced back to several centuries BC. For ancient and medieval Europeans, the spices would come from unknown and mysterious places in the East. The history of cartography until the sixteenth century is closely related to how the semi-mythical Spice Islands were represented in maps. This paper tries to show the progressive appearance of the sources of spices in maps: from the first references in Ptolemy or the imprecise representation in Fra Mauro's or Martin Behaim's cartography, to the well-known location of the clove islands in Portuguese nautical charts and, finally, in the Spanish Padrón Real.

### 1. The first circumnavigation of the world and the purpose behind it

When the ship *Victoria*, carrying on board eighteenth exhausted crewmembers and at least three natives from the Moluccas, arrived in Sanlúcar de Barrameda on 6 September 1522 under the command of the Guipuscoan Juan Sebastián Elcano, almost three years had passed since its departure along with other four ships (*Trinidad*, *Concepción*, *San Antonio* and *Santiago*), from Sanlúcar port on 20 September 1519 –the official departure took place, however, in Seville on 10 August–. After sailing completely round the world, the survivors had just empirically confirmed something known, at least, since the times of Aristotle<sup>1</sup> (fourth c. BC): the sphericity of the Earth. The Greek philosopher was the first to give empirical (not metaphysical) arguments about it<sup>2</sup>. Moreover, he even introduced the possibility of reaching India sailing westwards from the Pillars of Hercules (the strait of Gibraltar) in these terms<sup>3</sup>: “*Beyond India and the Pillars of Hercules it is the Ocean which severs the habitable land and prevents it forming a continuous belt round the globe*”. In the first century, the Greek geographer Strabo insisted on the same idea in his *Geographia*<sup>4</sup>: “*Those who have returned from an attempt to circumnavigate the earth, do not say they have been prevented from continuing their*

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<sup>1</sup> For an overview on the development of the idea of a spherical Earth, see Harley, J. B, and Woodward, D. (1987) *The Foundations of Theoretical Cartography in Archaic and Classical Greece. The History of Cartography, Vol. I.*

<sup>2</sup> After mentioning the invariable circular shape of the shadow projected on the moon by the earth during lunar eclipses, and the variation of the altitude of stars over the horizon as the observer moves in latitude, Aristotle concludes (*On the Heavens*. 2.14): “*All of which goes to show not only that the earth is circular in shape, but also that it is a sphere of no great size*”. Translation by J. L. Stocks (1922): 298<sup>a</sup>

<sup>3</sup> Aristotle. *Meteorologica* 2.5. Translation by H. D. P. Lee (1952): p. 183

<sup>4</sup> Strabo. *Geographia* 1.1.8. Translation by H. C. Hamilton and W. Falconer (1854). Vol. I: pp. 7-8.

*voyage by any opposing continent, for the sea remained perfectly open, but through want of resolution, and the scarcity of provision”.*

The project to reach India by the western route survived the general regression of the Middle Ages. In 1410, the French cardinal and geographer Pierre D’Ailly (1351-1420), one of the main sources of inspiration for Columbus plan, wrote in his treatise *Imago Mundi*<sup>5</sup> that “*the earth is spherical and the Western ocean is relatively small*” and, citing Seneca, that “*one can traverse that sea in a few days if the wind is favorable*”. During the following decades, in which schematic medieval *mappaemundi* evolved into a more sophisticated type –called *transitional* according to Woodward classification<sup>6</sup>–, the known world was represented in round shape, surrounded by water and implicitly spherical, and therefore, navigable without interruption from Europe to Asia (see the world maps of Pietro Vesconte or Fra Mauro in figures 7 and 11). In 1474, the Florentine physician and cosmographer Paolo Toscanelli (1397-1482) made a proposal to the Portuguese Crown for going to India navigating westwards. In 1481, he sent a copy of this letter with the mentioned proposal to Columbus, including a nautical chart that showed an uninterrupted Atlantic Ocean between Europe and the coast of Asia. This copy of the original 1474 letter survived in a volume that belonged to Columbus, but the nautical chart is lost. Columbus, who based much of his plan on Toscanelli’s information as well as in D’Ailly’s *Imago Mundi*, would eventually reach the supposed “Indies” and died convinced of having arrived in Asia. Meanwhile, since the conquest of Ceuta in 1415, successive Portuguese expeditions had been progressing southwards down the African western coast trying to find the southern end of the continent. Bartolomeu Dias managed to sail beyond the Cape of Good Hope in 1488, thus opening the way for Vasco da Gama’s expedition, who arrived in the Indian main trading post of Calicut in 1498.

As we have seen, the sphericity of the earth was not a novelty at all for learned people and the main powers wanted to win the race to India. So, what was the point of such an enormous interest in India? Since the antiquity, the Europeans considered the Far East an unknown and semi-mythical source of richness and luxury goods: precious stones, silk, clothes, aromatic plants and spices which would come to Europe following land routes through central Asia or by sea routes crossing the Indian Ocean and then, the Persian Gulf or the Red Sea. Once in the Levant ports, these products were distributed to other Mediterranean cities and, from there, to the rest of Europe (fig. 1). Spices were highly esteemed in Europe as condiments, perfumes, medicaments or, simply, a way to show a high social status due to their price and the Roman geographer Pliny the Elder complained as early as the first century about the immense expenditure of Rome in this luxury trade with India<sup>7</sup>. After the fall of Constantinople in 1453, the Ottoman Empire set a blockade and imposed high taxes on commercial routes coming from the East with destination to Europe. Traditional naval republics, like Venice or Genoa, which monopolized the trade with the East in the Mediterranean, suffered a serious blow. The only opportunity for western countries like Portugal and Spain to get access to the richness of the East was to find an alternative route in the Atlantic. Spain tried to do it by sailing westwards with

<sup>5</sup> There is a facsimile, with translation and study of the 1480-1483 printed edition of *Imago Mundi*, which Columbus had in his library, currently in the Biblioteca Colombina in Seville. Testimonio Compañía Editorial (1990).

<sup>6</sup> Woodward, D. (1987). *Medieval Mappaemundi. The History of Cartography, Volume I*: pp. 296-299.

<sup>7</sup> “*In no year does India drain our empire of less than five hundred and fifty millions of sesterces, giving back her own wares in exchange, which are sold among us at fully one hundred times their prime cost*”. Pliny the Elder. *Natural History*. 6.26. Bostock, J. and Riley, H. T. (1854). *The Natural History of Pliny*. v.II: p. 63.

Columbus in 1492, but he came across an unexpected new continent instead. In 1494, both Iberian countries signed the Treaty of Tordesillas in order to avoid an unproductive rivalry in their respective commercial expansion. The Treaty divided the newly discovered lands outside Europe along a meridian 370 leagues west of the Cape Verde islands. The lands to the east would belong to Portugal and the lands to the west to Spain. However, in 1494 none of the signatories was concerned about the location of the antemeridian yet, a problem that would arise several years later.

Starting in 1498 with Vasco da Gama arrival in India, the Portuguese expansion in the Far East reached in 1512 the, until then, unknown Spice Islands (Banda and the Moluccas), the native source of the most expensive spices: cloves and nutmegs (and mace, the nutmeg seed covering). When the news of this discovery reached Spain, an argument arose between the two Iberian powers<sup>8</sup>, because both kingdoms claimed that the archipelago lay on its side of the antimeridian, something impossible to confirm due to the lack of technical means to measure the longitude with some accuracy (as it would remain until the invention of the marine chronometer in the eighteen century). As the route to India by the Cape of Good Hope and the Indian Ocean belonged exclusively to the Portuguese according to the Treaty of Tordesillas, Spain had no option but searching a western route to the *Especiería* (Spice Islands). This was the starting point of the plan that Magellan presented to the King Charles I of Spain in 1518: to reach the Spice Islands through an undiscovered passage in South America that he claimed to know. The title of the contract for this expedition leaves no doubt about the objective of the voyage: “[contract between] *The King, with Hernando de Magallanes and the bachelor Luis (sic) Falero for the discovery of the Spice Islands*”<sup>9</sup>. The contract was not, therefore, for sailing around the world, something that was eventually achieved because Elcano decided to return to Spain following the known Portuguese route, instead of facing the uncertainty and perils of the *Tornaviaje* (return route) crossing the Pacific back towards America<sup>10</sup>.

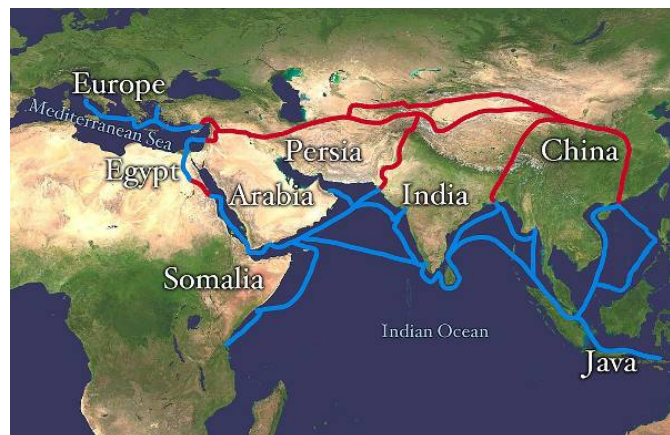


Figure 1: Main trade routes from the Far East into Europe before 1498. Red: land routes. Blue: Sea routes. Source: Wikimedia Commons (public domain).

<sup>8</sup> The dispute would not be eventually solved until the Treaty of Saragossa (1529), when Spain sold its rights on the Moluccas to Portugal for the exorbitant price of 350.000 *ducados* of gold.

<sup>9</sup> “*El Rrey. Con Hernando de Magallanes y el bachiller Luis Falero para el descubrimiento de la Speçiería*”. Archivo General de Indias, Indiferente General, 418, libro I, ff. 14v-16r. In facsimile in, *La Primera Vuelta al Mundo*. Testimonio Compañía Editorial. 1998.

<sup>10</sup> The *tornaviaje* would not be eventually discovered by the Spaniards until 1565, after five failed attempts along more than 40 years. See, Gil J. (2019). *Legazpi. El tornaviaje. Navegantes olvidados por el Pacífico Norte*.

## 2. The spices in ancient geography

The interest of Mediterranean peoples in luxury goods from the East can be traced back to several centuries BC. The Greek historian and geographer **Herodotus** (fifth century BC) wrote about Arabia (he meant southeastern Africa) that, “*is the furthest of inhabited lands in the direction of the midday, and in it alone of all lands grow frankincense and myrrh and cassia and cinnamon and gum-mastic*”<sup>11</sup>. On the mythical origin of the cinnamon, he adds, “*where it grows and what land produces it, they [the Arabians] are not able to tell (...) and they say that large birds carry those dried sticks which we have learnt from the Phoenicians to call cinnamon, carry them, I say, to nests which are made of clay and stuck on to precipitous sides of mountains, which man can find no means of scaling*”<sup>12</sup>. In the first century BC, the Greek geographer **Strabo** related in his *Geography* that, “*Southern India, like Arabia and Ethiopia, produces cinnamon, nard, and other aromatics. It resembles these countries as regards the effect of the sun's rays, but it surpasses them in having a copious supply of water, whence the atmosphere is humid, and on this account more conducive to fertility and fecundity*”<sup>13</sup>. He also assigns to Ethiopia other spices and *aromata* like myrrh, frankincense, false cassia and cinnamon<sup>14</sup>, represented later by Ptolemy in his maps as the Cinnamon Country (*Cinnamomifera*) and the Myrrh Country (*Smyrnofera*). As we have seen before, **Pliny the Elder** (AD 23-79) gave the first written account of the high value of oriental spices in the Roman Empire. When describing the pepper tree, the different kinds of pepper and the ginger, he also expresses his surprise that “*the use of pepper has come so much into fashion; (...) its only desirable quality being a certain pungency; and yet it is for this that we import it all the way from India! Who was the first to make trial of it as an article of food? (...) Both pepper and ginger grow wild in their respective countries, and yet here we buy them by weight, just as if they were so much gold or silver*”<sup>15</sup>.

However, spices first appeared in maps in **Ptolemy's Geographia** (ca. AD 150). Although no manuscript earlier than the thirteenth century has survived, and scholars still debate whether Ptolemy's original manuscript contained maps or not<sup>16</sup>, there is no doubt that the geographic references in Ptolemy's gazetteer intended to represent places by coordinates in a map. In his fourth map of Africa, Ptolemy placed the *Smyrnofera* (land of the myrrh) and *Cinnamomifera Regio* (Cinnamon Country) in Ethiopia and, not far away, the *Aromata promontorium et emporium* (Cape of [aromatic] spices and market place)<sup>17</sup>, identified with the current cape Guardafui, the apex of the Horn of Africa (fig. 2). In the sixth map of Asia (the Arabian Peninsula), there are two other myrrh-producing lands (*Smyrnophoros interior* and *exterior*). In the eleventh map of Asia, “India beyond the

<sup>11</sup> Herodotus. *History* 3.107. G. C. Macaulay (1890). *The History of Herodotus*. Vol I. Macmillan. New York: p. 262.

<sup>12</sup> *Ibid.* 3.111: p. 263.

<sup>13</sup> Strabo, *Geography* 15.1.22. Translated by H. C. Hamilton and W. Falconer (1854). Vol. III: p. 86

<sup>14</sup> *Ibid.* 16.4.14: p. 200

<sup>15</sup> Pliny the Elder. *Natural History* 12.14. Bostock and Riley (1854). *The Natural History of Pliny*. V.III, pp. 112-113.

<sup>16</sup> Mittenhuber (2010) summarizes the different opinions on this matter in, *The Tradition of Texts and Maps in Ptolemy's Geographia*: p. 95.

<sup>17</sup> Claudius Ptolemy. *Geographia* 4.8 and 4.7. For convenience, we are using the Latin version of the toponyms, translated ca. 1406, instead of the original Greek. For English translations of the text, see: Berggren and Jones (2002); Stevenson E. L. (1932), re-published in reduced format in 2011.

Ganges”, (*India extra Gangem*), Ptolemy mentions a land above *Cirradia* “in which they are said to produce the best malabathrum (a kind of cinnamon)”<sup>18</sup> (fig. 3). Curiously, cinnamon is not mentioned in the chapter dedicated to Taprobana (twelfth map of Asia), despite of this island being usually identified with Ceylon, the country of origin of the true cinnamon (*Cinnamomum verum*)<sup>19</sup>. Instead, Ptolemy credits the island of Taprobana with producing ginger<sup>20</sup>.



Figure 2: Detail of *tabula IIII Africae* in Lorenz Fries' 1525 edition of Ptolemy's *Geographia*. *Cinamomifera* is labeled in the lower left part of the image. *Smyrnofera* appears to the east of *Cinamomifera* and just on the equinoctial line. *Aromata* [promontorium] is located at the easternmost point of Africa. Instituto Geográfico Nacional (912-19).



Figure 3: Detail of *tabula XI Asiae* in Lorenz Fries' 1525 edition of Ptolemy's *Geographia*. In the center of the image we can read, “*Cirradia in qua optimum malabathrum*” (*Cirradia in which [they are said to produce] the best malabathrum*). Instituto Geográfico Nacional (912-19).

<sup>18</sup> It refers to *Cinnamomum malabathrum*, a species considered inferior to Ceylon cinnamon and cassia.

<sup>19</sup> According to Cooley, the cinnamon of Ceylon, a different kind to that harvested in eastern Africa, remained unknown to the ancients until the sixth century. See, Cooley, W. D. (1849). *On the Regio Cinnamomifera of the Ancients*. The Journal of the Royal Geographical Society of London. 1849, Vol. 19: pp. 166-191.

<sup>20</sup> Ptolemy. *Geographia* 7.4.

It must be noted that, as the geographical knowledge of the true source of spices was being revealed, the imprecise location referred by the ancients was criticized. Thus, in 1522, Maximilianus Transylvanus, secretary of the king Charles I of Spain, wrote his famous letter to Cardinal-Archbishop of Salzburg several days after the return of the *Victoria*, a letter that, in 1523, would become the first printed account of Magellan and Elcano's expedition under the title of *De Moluccis insulis* (on the Moluccas). In the first chapter of his account Transylvanus says that, according to Herodotus, “cinnamon is collected from bird nests, which bring it from very distant lands to build their nests, and it is mainly found in phoenix nest, even though I do not know if someone has ever seen that nest”<sup>21</sup>. Transylvanus also contradicts Pliny when the Roman “says that cinnamon grows in Ethiopia, next to the Troglodytes country, however, we have discovered that the land of the spices is very far away from Ethiopia (...) and the Spaniards, who came back in the [Victoria] ship loaded with spices, had to sail half the world from our hemisphere in order to find the land where the spices grow.”<sup>22</sup>

### 3. Spices in early Middle Ages mappaemundi

The fall of the Western Roman Empire (fifth century) meant a general step backwards in all sciences, geography included. The culmination of Greek cartography reached with Ptolemy apparently disappeared and was replaced by schematic world maps (*mappaemundi*) focused in a Christian view more than in accurate geographical descriptions. Likewise, the knowledge about oriental affairs, including the spice trade, continued relaying on Greek and Roman authors. **St. Isidore** of Seville (*ca.* 560 – 636), the greatest scholar of his period and author of the earliest known encyclopedia, the *Etymologiae*, is usually associated with the archetype of the T-O tripartite world map<sup>23</sup>, which would inspire many medieval *mappaemundi* until the appearance of nautical charts in the thirteenth century. It is understandable that such an exhaustive encyclopedia like his *Etymologies* included one chapter dedicated to aromatic plants and spices. In the chapter “on the aromatic trees” (*De aromaticis arboribus*)<sup>24</sup>, he says “spices are whatever India or Arabia or other regions produce that have a fragrant scent”. He is not original at all in locating the source of spices, because he explicitly places myrrh in Arabia, cinnamon in Ethiopia and India, and pepper in India too. St. Isidore also contributed to the mythology of the spices and, when speaking about pepper, he wrote, “serpents protect the pepper groves, but the inhabitants of that region, when the peppers ripen, burn them, and the serpents are put to flight by the fire and from this flame the pepper, which is naturally white, is made black”<sup>25</sup>. In 776 A.D., the Spanish monk **Beatus of Liébana** wrote the Commentary on the Apocalypse of St. John, which included a very important type of *mappamundi*, mainly based on the descriptions and models of Paulus Orosius (*Against the pagans*) and St. Isidore (*Etymologiae* and *De natura rerum*).

<sup>21</sup> Translated into English from the Spanish letter, in Fernández de Navarrete, M., *Colección de los viajes y descubrimientos que hicieron por mar los españoles desde fines del siglo XV, tomo IV, Expediciones al Maluco, Viage de Magallanes y Elcano*. Madrid, 1837. Reprinted in Biblioteca de autores españoles. Obras de D. Martín Fernández de Navarrete. Edición de Carlos Seco Serrano. Madrid. 1964. p. 558

<sup>22</sup> When speaking of the sources of cinnamon in this comment, Transylvanus is not completely right. See note 19

<sup>23</sup> St. Isidore of Seville. *Etymologiae* 14.2. Barney, S. A., Lewis, W. J., Beach, J. A., Berghof, O. (2006). *The Etymologies of Isidore of Seville*: p. 285

<sup>24</sup> Ibid. 17.8: p. 348

<sup>25</sup> Ibid. 17.8: p. 349

The Beatus world map survives in 14 manuscripts, copied along several centuries. Although Beatus world maps do not usually have abundance of written legends, six of the maps, those belonging to the so-called family IIab of the *stemma*, share several features<sup>26</sup>, like a legend about Ethiopia referring multitude of monstrous races and serpents, but also “many precious gems, cinnamon and balsam”<sup>27</sup> (fig. 4).

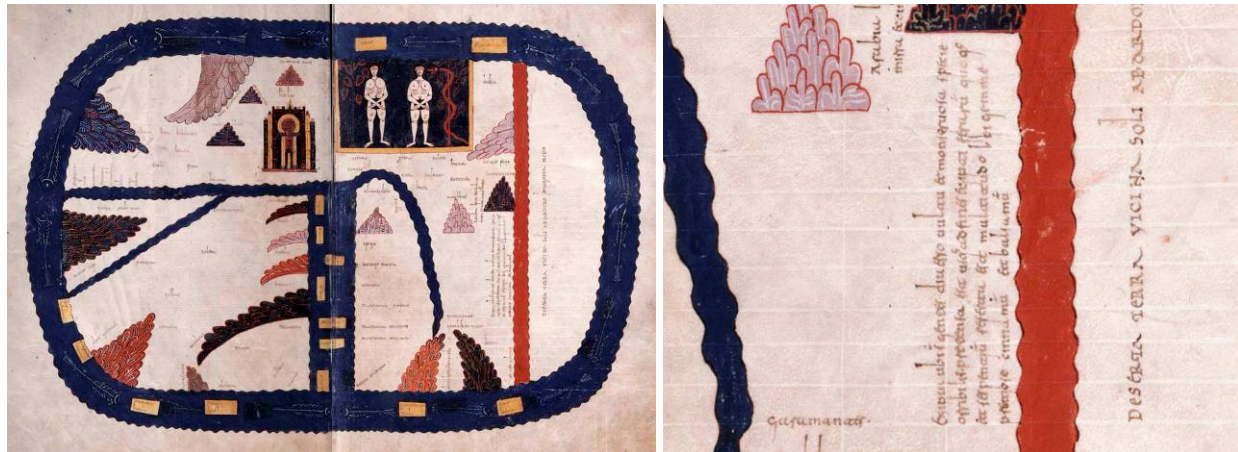


Figure 4: *Mappamundi* in the Beatus of Fernando and Sancha (1047) and detail of the legend: “*Ezizia ubi sunt gentes diuerso uultu et monstrosa specie orribilis pretensa est usque ad fines Egipti ferarum quoque et serpentium, referta est multitudo ibi gemme preciose, cinnamum et balsamum*”. Biblioteca Nacional de España (VITR/14/2). bdh.bne.es.

Two other medieval maps, categorized as *orosian* by Woodward<sup>28</sup>, include a legend about a pepper forest: the **Sawley map** of ca. 1110 (also known as Henry of Mainz map) features the legend *silva piperis* (pepper forest) roughly in the Arabian Peninsula (fig. 5). The **Hereford map** of ca. 1290 has almost the same text (*silvas pipereas*) in more or less the same place (fig. 6). The similarity of the texts and their location in the map reinforces the belief in a common map model.

Only several decades after the Hereford map, the Venetian cartographer **Pietro Vesconte** was the first to blend the precise outline of the Mediterranean coasts taken from the portolan charts, with the overall circular design of medieval *mappaemundi*. The result was the first transitional *mappamundi*, ca. 1321, which survives inserted in nine manuscripts of Marino Sanudo’s *Liber secretorum* and in two Fra Paolino’s codices of his *Chronologia magna*<sup>29</sup>. Although Vesconte’s map is some years later than the travels of Marco Polo, it does not show any influence of his narrative. The map shows *zinziber* (a possible confusion between ginger and the name Zanzibar) and *noçe* or *neçe* (nutmeg?) in western Africa. In the Indian Ocean, close to the border of the map, there is a Pepper Island (*insula pipis* or *insula piperis*) in what might be one of the earliest cartographic references to the Spice Islands (fig. 7).

<sup>26</sup> For a thorough study on Beatus maps, see Sáenz-López Pérez, S. (2014). *Los mapas de los beatos. La revelación del mundo en la Edad Media*. On the family IIab, *ibid*: pp. 68-69.

<sup>27</sup> Transcription from Sáenz-López Pérez, S. (2010). *El mundo para una reina: los mappaemundi de Sancha de León*. *Anales De Historia del Arte (1013-1067)*: p. 327.

<sup>28</sup> Woodward, D. (1987). *Medieval Mappaemundi. The History of Cartography*. Volume I. Part three: pp. 300-301.

<sup>29</sup> The surviving Vesconte’s *mappaemundi* are listed in Woodward, D. *Medieval Mappaemundi*: pp. 363-364. There is also a 1611 printed version of the map by Johann Bongar.

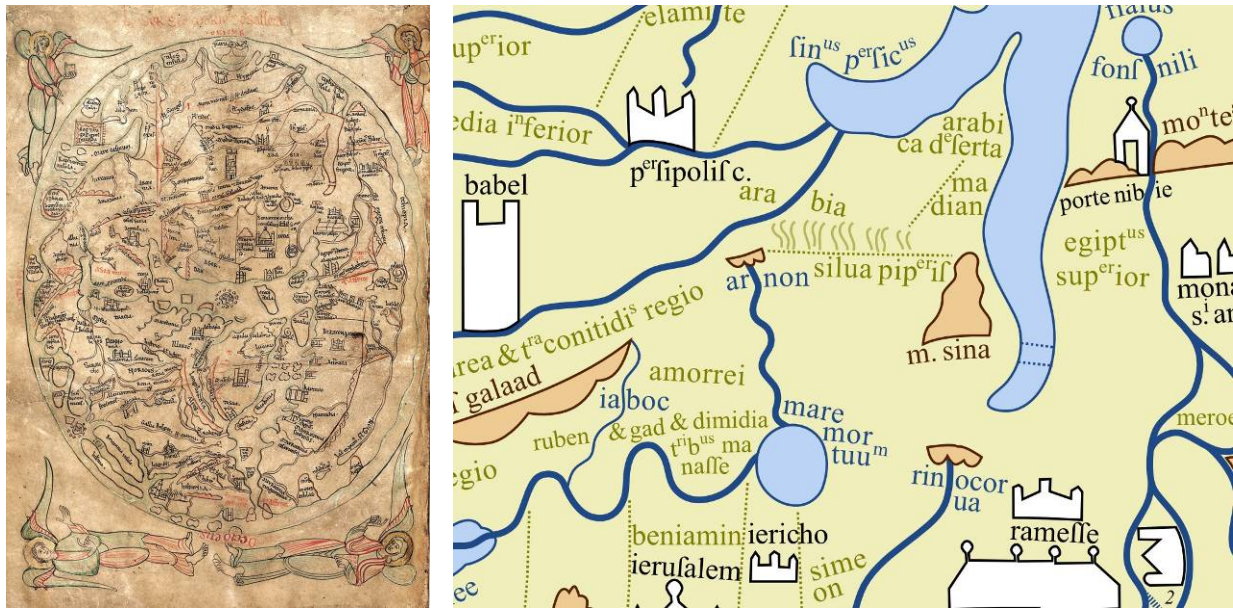


Figure 5: The Sawley world map of ca. 1110 (Corpus Christi College, Cambridge, MS 66) and detail of the legend “*silva piperis*” left of the *m. sina* (Mount Sinai), in a redrawing of the map by Mapmarks (source: Wikimedia Commons).



Figure 6: The Hereford world map of ca. 1290 (Hereford Cathedral, England) and detail of the legend “*silvas piperas*” under the mouth of the Euphrates River flowing left to right to empty into the Persian Gulf (in red).





Figure 7: Pietro Vesconte world map (ca. 1321), with the East at the top, and detail of the *insula pipis*. Map included in Fra Paolino's *Chronologia magna*. Source gallica.bnf.fr / Bibliothèque nationale de France. Département des manuscrits. Latin 4939, f. 9r.

#### 4. New Knowledge on the sources of spices: Medieval European travelers in the far East

##### 4.1 The travels of Marco Polo

Until Marco Polo's voyage (1271-1295), European knowledge on the Far East in general and on the source of spices in particular, relied on ancient Greek and Roman fonts. The Venetian was the first to bring back to Europe first-hand information about China and, more important to our issues, to report of "7459 islands" –the figure varies slightly depending on the manuscript– lying eastwards of the "Sea of Chin": "*there is not one of those Islands but produces valuable and odorous woods like the lignaloe, aye and better too; and they produce also a great variety of spices. For example, in those Islands grows pepper as white as snow, as well as the black in great quantities. In fact, the riches of those Islands is something wonderful, whether in gold or precious stones, or in all manner of spicery; but they lie so far off from the main land that it is hard to get to them*"<sup>30</sup>. He seems to be speaking about an archipelago, which would include, among others, the Philippines and the Moluccas. Polo also brought news of the island of Java *the Great* –in spite of the greater size of Sumatra, called "Java the Less" or "Lesser Java"–, one of the main markets for Moluccan spices. He reports, "*the Island [Java] is of surpassing wealth, producing black pepper, nutmegs, spikenard, galingale, cubebs, cloves, and all other kinds of spices*"<sup>31</sup>. He also describes several islands and archipelagos in the Indian Ocean, like Nicobar, Andaman or Ceylon, and much better descriptions of the Indian coast than ancient sources. From his narrative, we learn of the places where pepper and ginger grow, and of other spices on route to the Mediterranean ports.

<sup>30</sup> *The travels of Marco Polo*. Book third, chapter IV. Yule, H. and Cordier, H. (1920)

<sup>31</sup> *Ibid*. Book third, chapter VI.

The **atlas of Abraham Cresques** or Catalan Atlas (1375) is the first medieval world map to incorporate Marco Polo's descriptions and geographical references<sup>32</sup>. A legend in the Red Sea taken from Marco Polo<sup>33</sup> says, “*Through this sea pass most of the spices arriving at Alexandria from India*” (fig. 8); other legends from different sources are displayed in Babylonia (“*Let it be known that many spices, as well as other noble products, come to this city from the Indies and they are distributed in Syria, in particular at the city of Damascus*”) and the mythical kingdom of Sheba (“*in it there are very good aromas, as well as myrrh and frankincense*”). However, the text on the island of “Jana” –Marco Polo's Java, wrongly represented by Cresques where Ceylon should be– is taken, at least partially, from Polo: “*In the city of Jana there are many trees of aloe, camphor, sandalwood, fine spices, galangal, nutmeg and the tree of cinnamon which spice is most desirable than any other from India*”<sup>34</sup> (fig. 8). Two more legends on the southeastern part of the map tell of the “*Sea of the Indies where one finds spices*” and where “*there are seven thousand five hundred and forty-eight islands, whose wonders of gold, spices and precious stones we cannot discuss here*”<sup>35</sup>.



Figure 8: Cresques atlas of 1375. Left: The Red Sea with the legend, in black ink, about the spice trade. Right: The island of Jana (*Ilha Jana*), with the legend about its richness in spices and *aromata* oriented vertically

Another world map of Majorcan source, the **mappamundi Estense** (ca. 1450)<sup>36</sup> has almost the same legends than the Catalan Atlas in Babylonia (“*Let it be known that to this city come fine spices and aromatic [plants] from the Indies, and then they are distributed in Syria, land of Judah*”) and at the Gulf of Aden (“*at the entrance of the Red Sea there is a castle called Aden; here they charge a tenth of the spices which come from India and then they go to the city of Cos*”. Fig. 9). A similar text appears next to a junk in the Indian Sea: “[the junks] *carry goods from the Indies; when they set sail, they pay a tenth of the spices they carry*” (fig. 9). Close to the (alleged) island of Java it is written, “*This island is called Java, in which there is a lot of spices*”.

<sup>32</sup> The facsimile by Abaris Books (1978), *The Catalan Atlas of the year 1375*, includes transcription and translation of the legends. Translation also available in English at <http://www.cresquesproject.net>.

<sup>33</sup> Yule, H. and Cordier, H. (1920). *The travels of Marco Polo*. Book third, chapter XXXVI.

<sup>34</sup> *Ibid.* Book third, chapter VI.

<sup>35</sup> *Ibid.* Book third, chapter IV. Cresques mistakes 7548 islands instead of the 7459 islands according to Marco Polo.

<sup>36</sup> There is a facsimile of the map and a book of study in Spanish and Catalan by M. Moleiro Editor (Barcelona, 2004; 1996) with the transcription of the legends.

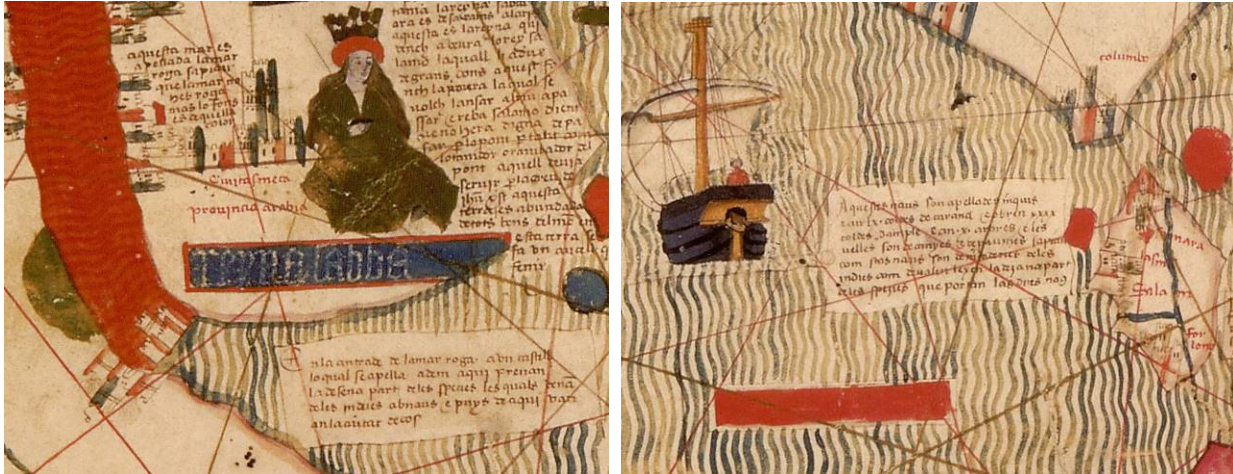


Figure 9: Mappamundi Estense ca. 1450. Left: Detail of the legend about Aden, represented by a castle at the entrance of the Red Sea; the Queen of Sheba is sitting in the Arabian Peninsula. Right: The legend about the junks in the Indian Sea, between a ship and the island of Ceylon.

#### 4.2. The travels of Nicolò de Conti (1419-1444). First report of the Moluccas and Banda

Although there are more medieval *mappaemundi* with references to spices<sup>37</sup>, all the maps seen up to this point follow the classical authors or Marco Polo's narrative, with Java as the easternmost known island where cloves and nutmegs could be purchased. The first European to report the existence of the Moluccas and Banda was Nicolò de Conti, whose relation was partially recorded by Poggio Bracciolini (1380-1459), secretary of the Pope Eugenius IV. Conti's description of the Spice Islands is geographically confused, as he speaks of two islands, located at fifteen days' sail east of Java the Greater (Java) and the Less (Sumatra), "called *Sandai*, in which nutmegs and maces grow; the other is named *Bandan*; this is the only island in which cloves grow, which are exported to the Java islands"<sup>38</sup>. It is very likely that *Sandai* refers to the Moluccas, and *Bandan* to Banda, however changing the order of the spices found there –nutmegs and mace would actually grow in *Bandan* and cloves in the Moluccas (*Sandai*). The so-called **Genoese world map** of 1457 strongly reflects the influence of Conti's reports, especially in the East. There is a legend in the Indian Ocean, close to a three-masted ship, in which the cartographer informs us that these ships "loaded in particular with spices and other aromatics, sailing rather often to Mecca in Arabia, trade with the Western merchants through an exchange of their goods"<sup>39</sup>. Two legends are undoubtedly taken from Conti, in Ceylon ("produces cinnamon from trees similar to our willow tree") and Taprobana (a sort of duplicated Ceylon, in which "they have an abundance of pepper, camphor and much gold")<sup>40</sup>. Indeed, Conti's *Sandai* and *Bandan* appear for the first time in a map (fig. 10).

<sup>37</sup> For instance, Walsperger (1448) has "ortus piperis" (the source of pepper) in Taprobana and "ortus balsam" in the Red Sea. The Borgia map of mid-15<sup>th</sup> century shows "balsamum, mirra, cynamomum et aloes" in "Arabia or Sabea".

<sup>38</sup> *The travels of Nicolò Conti*. Translation and notes by Winter Jones, J. (1857): p. 17.

<sup>39</sup> "Et eis permaxime speciebus et ceteris aromatibus oneratis sepius ad Mechan Arabiae applicantes mercatoribus occidentalibus per mutationem mercium iniunt". Latin transcription of the legends in the Genoese map taken from Stevenson E. L. (1912) *Genoese World Map, 1457*: p. 27.

<sup>40</sup> Stevenson E. L. (1912) *Genoese World Map, 1457*: pp. 19-20.



Figure 10: Genoese world map of 1457 (Biblioteca Nazionale Centrale di Firenze, portolano 1). Right: The two large pale green islands off the east coast of Asia “are called Java” (“*Hec insule Jaue dicte sunt*”) according to the legend to their north. A legend south of “the Javas” refers to the two smaller islands, colored yellow and red, named *Sanday* and *Bandan*, whence nutmegs and cloves come to the Javas (“*Sanday et Bandan dicuntur insule iste, nam Sanday croces, nuces muscatas et macis, Bandan vero gariofilorum copiam ad Javas transmittunt*”)<sup>41</sup>

**Fra Mauro’s world map** (1459) is probably the last great medieval *mappamundi*, not only for its size, but also for the richness of geographical information and its lavish decoration. Commissioned by Afonso V, King of Portugal, the map shows an open Indian Ocean –not a landlocked one, as proposed by Ptolemy–, which reaffirms the Portuguese projected circumnavigation of Africa in order to open a direct maritime route to the Indies<sup>42</sup>. Regarding the spices, there is a general legend on the Indian Ocean, which reads: “*In this sea there are many islands that cannot be specially noted because of lack of space. But all are inhabited and very fertile in various precious spices and many other new things; and they are very rich in gold, silver and different types of gemstones*”<sup>43</sup>. We also find, referring to Arabia: “*Arabia Sabea, a most noble province, in which grow myrrh, cinnamon and incense and there are precious stones and metals*”<sup>44</sup>. In another interesting reference to the trade routes of his times, he tells: “*Although in the nearby note I say that the spices travel as far as the Black Sea, today the roads are in such a poor state that they no longer reach that far*”<sup>45</sup>, which gives a clue on the preference for the sea route through the Red Sea over the land route.

However, most legends on the map come either from Marco Polo or from Nicolò de Conti. A legend tells us about Hormuz, at the entrance of the Persian Gulf, that, “*here come some of ships from India*

<sup>41</sup> Ibid: p. 23.

<sup>42</sup> In one of the most relevant legends of the map, Fra Mauro states, “*some authors write that the Sea of India is enclosed like a pond and does not communicate with the ocean. However, Solinus claims that it is itself part of the ocean and that it is navigable in the southern and south-western parts. And I myself say that some ships have sailed it along that route. This is confirmed by Pliny when he says that in his day two ships loaded with spices coming from the Sea of Arabia sailed around these regions to Spain and unloaded their cargo at Gibraltar*”. For the transcription of the legends (in Italian) see, Falchetta, P. (2016), *Storia del Mappamondo di Fra Mauro. Con la trascrizione integrale del testo*.

<sup>43</sup> Ibid: p. 170.

<sup>44</sup> Ibid: p. 162. “*Arabia sabea p(ro)ui(n)cia nobilissima ne la qual nasce mira cinamomo e incenso e piere p(re)tiouse e metli*”. Compare with the legend on “*Arabia or Sabea*” in the Borgia map (note 37), also from the Book of Kings in the Old Testament.

<sup>45</sup> Ibid: p. 176.

with their merchandise of pearls, pepper, ginger and other spices in great quantity. These then travel by way of Balsera and Bagadat –that is, the Babilonia of the Chaldeans– to the river Tigris and Euphrates and then to Mesopotamia, Armenia, Cappadocia and even the Sea of Pontus”<sup>46</sup>. This text, specially the first sentence, is quite similar to Marco Polo’s statement about Hormuz: “*Merchants come thither from India, with ships loaded with spicery and precious stones, pearls, cloths of silk and gold, elephants’ teeth, and many other wares, which they sell to the merchants of Hormos, and which these in turn carry all over the world to dispose of again*”<sup>47</sup>. On the island of Java the Less (Sumatra), another legend informs us: “*A most fertile island, Java Minor has eight kingdoms and is surrounded by eight islands, in which grow fine spices. And on this said Java grow ginger and other noble spices in great quantity, and at the time of harvest, all that grows on this and the other islands is taken to Java Major and there is divided into three parts: one part [is sent] to Caiton and Cathay, another to Hormus, Cide and Mecca, by the Sea of India, and the third is sent northwards across the Sea of Cathay. And according to the testimony of those who sail this sea, from this island one sees the Southern Cross a yard above the horizon*”<sup>48</sup>. Compare this information about Java the Less with Polo’s description: “[in Java the Less] *you see there are upon it eight kingdoms and eight crowned kings. The people are all idolaters, and every kingdom has a language of its own. The Island hath great abundance of treasure, with costly spices, lign-aloes and spikenard and many others that never come into our parts. (...) this Island lies so far to the south that the North Star, little or much, is never to be seen*”<sup>49</sup>.

Nicolò de Conti’s report of the Moluccas and Banda is also present in Fra Mauro’s map – contemporary with the Genoese world map of 1457–: “*The Island of Sondai is near Bandan. Here grow nutmeg and other spices in great quantities*”. “*Bandan, a small island close to the shadows, on which grow a lot of cloves*”<sup>50</sup> (fig. 11). The assignment of nutmeg to *Sondai* (Moluccas) and cloves to *Bandan* (Banda), although faithful to Conti, is just as wrong, because the order is the opposite.

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<sup>46</sup> Ibid: p. 160.

<sup>47</sup> Yule and Cordier (1920). *The travels of Marco Polo*. Book first, chapter XIX.

<sup>48</sup> Falchetta. *Storia del Mappamondo di Fra Mauro*: p. 169.

<sup>49</sup> Yule and Cordier (1920). *The travels of Marco Polo*. Book third, chapter IX.

<sup>50</sup> Falchetta, P. (2016), *Storia del Mappamondo di Fra Mauro*: p. 70.



Figure 11: Fra Mauro's world map (1459. Biblioteca Nazionale Marciana, Venice) and detail of the Indian Ocean. The upper legend is the one about Banda, the "small island" (*isola piccola*) located below the cartouche and the word *MARE*. The island of *So(n)dai*, possibly one of the Moluccas or the whole group, lies just below Banda and above the lower cartouche about *Java minor* (*Giava menor*), in which "grow ginger and other noble spices in great quantity".

## 5. In the eve of the great discoveries

The Portuguese crossing of the Cape of Good Hope in 1488, apart from confirming the true shape of Africa as a continent surrounded by water –contrary to Ptolemy's belief–, also paved the road to reach the Indies by sea avoiding long, dangerous and expensive land routes and intermediaries. Four years later, the Spaniards discovered America, a new continent initially mistaken for Asia. The timespan between 1489 and 1492 saw the appearance of the highly influential world maps of Henricus Martellus Germanus, a German cartographer active in Florence in the late fifteenth century. One of these world maps was the source for the last cartographic document predating the discovery of America, which is also the earliest surviving terrestrial globe: **Martin Behaim's Erdapfel**, currently at the Germanisches Nationalmuseum (Nuremberg) and dated 1492, just before Columbus arrival in America. In the globe, in which America is obviously lacking, Behaim acknowledges as his sources Ptolemy, Marco Polo, John Mandeville and the explorations carried by order of King John of Portugal. Although not explicitly mentioned, Behaim is also indebted to Henricus Martellus' world maps in the cartographic layout of *extra ptolemaeum* lands unknown to Ptolemy (e. g. Japan or the Indonesian archipelago) which were verbally but not cartographically described by Marco Polo. The globe contains legends and toponyms related to spices. Behaim retains Ptolemy's *Cynamoriferi* (*Cinnamomifera*) and *Aromata* [*promontorium*] in Africa. From Marco Polo, we find the classical legends about spices in India, the Sea of Chin, *Java Minor* and *Maior*, *Neucuran* (Nicobar) and *Angaman* (Andaman). It is remarkable the existence of a pepper and a nutmeg forest (*pfeffer walt* and *moscat nuswalt*) in *Cipangu* (Japan); we can trace back this curious nutmeg forest to the map of *Çinpangu* by Henricus Martellus included in the manuscript of his *Insularium* at the Biblioteca

Medizea Laurenziana (Florence)<sup>51</sup>. However, the most interesting information about the spice trade is that written off the eastern coast of Africa, where Behaim, citing a Bartolomeo Florentino, gives a thorough –and partially contradictory– sequence of twelve stages for the spices on route to Europe, starting in the islands neighboring *Java Maior* and then going to *Seilan* or *Ceylon*, (back? to) *Aurea Chersonesus*, *Taprobana*, *Aden*, *Algeyro* (Cairo), Venice, Frankfurt and *Prugk* (Bruges), England and France and, finally, reaching the retail traders and the customers. At the end, he advises those who buy the spices of the retail dealers to “*be borne in mind which are levied twelve times upon the spices, the former amounting on each occasion to one pound out of every ten*”<sup>52</sup> (fig.12).

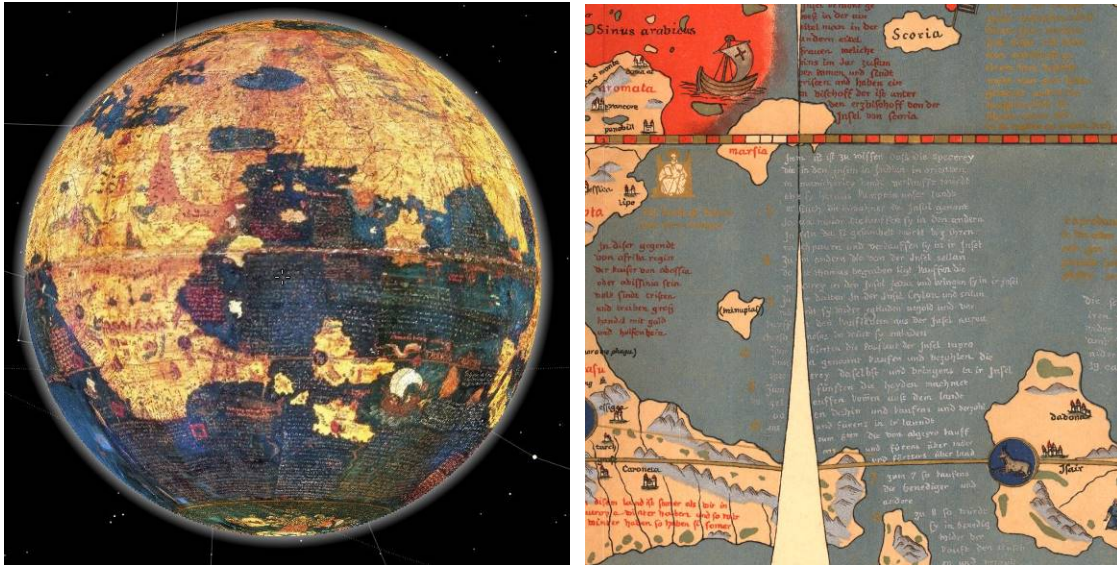


Figure 12: The Erdapfel of 1492 (Germanisches Nationalmuseum, Nuremberg). View of the Indian Ocean, from the virtual globe at <https://marble.kde.org/> and detail of the legend, in white, about the spice trade, from Ravenstein’s facsimile in gores (1908).

## 6. The India Run

The India Run was the name given by Spaniards (*Carrera de Indias*) and Portuguese (*Carreira da Índia*) to the commercial route that linked both countries with the (real or supposed) Indies. Since 1492 until the publication of Martin Waldseemüller’s *Universalis Cosmographia* world map (1507), the European general belief was that America was part of Asia. Thus, the Iberian powers did believe to be exploring different parts of the same Asia, however following either the western or the eastern route respectively. In fact, Columbus died in 1506 convinced of having arrived in the Indies in his four voyages to America. The reality was that, while the Spaniards did not find any valuable spices in America, the Portuguese began to approach to their actual source. From the arrival of Vasco da Gama at Calicut (India) in 1498 onwards, the European knowledge about the spices of the Far East dramatically increased, not only in variety, but also in accuracy, due to first hand witnesses. Although

<sup>51</sup> Pluteo 29.25. 73r. Available online at [www.bmlonline.it](http://www.bmlonline.it) searching for “plut.29.25”

<sup>52</sup> For transcriptions and translations of the texts in the globe see, E. G. Ravenstein (1908). *Martin Behaim, His life and globe*. On the spice trade, see pp. 89-90

traditional fonts, like the ancients or Marco Polo, remained on maps for some years, they were completely out surpassed by new information brought home by Portuguese expeditions.

The first known Portuguese map of East Asia is the **Cantino planisphere of 1502**. This non-Ptolemaic manuscript world map in the shape of a nautical chart also deals with the spice trade. Apart from having several legends with well-known information about spices, there are three more that reflect the new and updated information: On Calicut, recently discovered by Vasco da Gama, who brought home the first cargo of spices that came directly from India to Europe without intermediaries, a legend to the west of the city reports the existence of “*pepper and many others merchandise that comes from many places, cinnamon, ginger, clove, incense, sandalwood*”<sup>53</sup>. Malacca, the most important entrepot for the Moluccan spices, which would be first visited by the Portuguese in 1509 and later conquered in 1511, had been already reported by Vasco da Gama in terms similar to this legend on the map: “*Malaqua in this city there is every merchandise that comes into Calicut. Clove and benzoim and lignaloe and sandalwood, storax and rhubarb (...)*”. However, the most remarkable detail in the map is the appearance of an island called *calenzuam*<sup>54</sup> in the middle of the Indian Ocean, where “*there is plenty of cloves*” (*aqui he muyto clavo*), in which could be the first cartographic reference to the Moluccas after the Portuguese arrival in India (fig. 13). The very similar Caverio world map (*ca.* 1504) does feature the same legend on Calicut, on Ceylon (“*here grows cinnamon and many other kinds of spices (...)*”) and on *Taprobana* (Sumatra), but curiously, there is no text accompanying *calenzuam* and *mallaqua*, the main novelties regarding the new information about the spice trade further east of India.

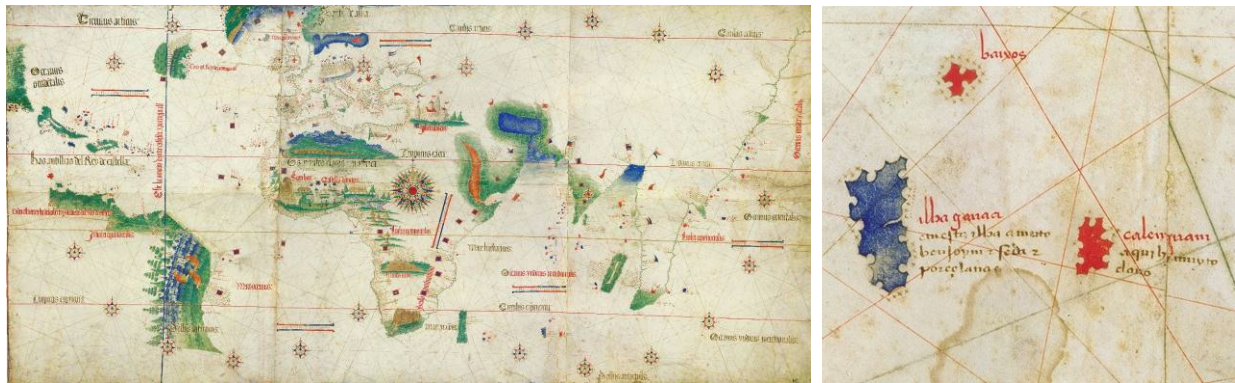


Figure 13: Cantino planisphere of 1502 (Biblioteca Universitaria Estense di Modena. C. G. A. 5.2) and detail of the small archipelago in the middle of the Indian Ocean, below the *Circulus Capricorni*. The red island to the east is *calenzuam*, where “there is plenty of cloves” (*aqui he muyto clavo*).

The **chart of the Indian Ocean dated 1510** and attributed to **Jorge Reinel** is part of a series of maps that allows following the progression of Portuguese geographical knowledge about the Far East in a relatively short period. There are some improvements in this chart compared with the Cantino planisphere, taking into account that Malacca had been already visited in 1509 and reported to Lisbon

<sup>53</sup> For a transcription of the texts in the Cantino planisphere see, Ernesto Milano (2004): “*Carta del Cantino. Commentario all’edizione in facsimile*”.

<sup>54</sup> Luís Filipe F. R. Thomaz (1995) reads *caleiciram* and associate it with Ceram Island (Banda group) in “*The image of the Archipelago in Portuguese cartography of the 16<sup>th</sup> and early 17<sup>th</sup> centuries*”. However, *calenzuam* appears exactly for the same island in Caverio world map confirming this form of the toponym.



in 1510. The most relevant to our topic is the representation of a small archipelago southwest of the Malay Peninsula in which the bigger green island has a legend below it that says, “*In this island grow all the cloves*” (*nesta ilha nace todo o cravo*) (fig. 14), which is a reference to the Moluccas, and although still imprecise, it shows a better location than in the Cantino map, whose *calenzuam* is preserved in just the same place by Reinel, but without any name or legend.

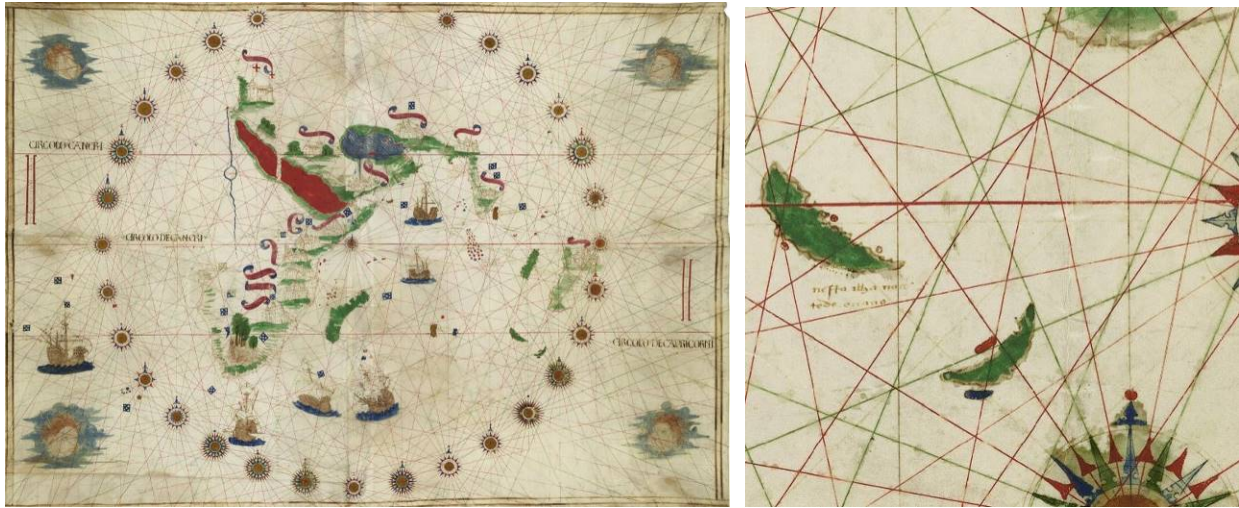


Figure 14: Chart of the Indian Ocean, 1510 (Herzog August Bibliothek, Wolfenbüttel, Cod. Guelf. Aug. fol. 98 K4) and detail of the island in which “grow all the cloves” (*nesta ilha nace todo o cravo*).

## 7. The discovery of the Moluccas and Banda

The discovery of the Moluccas is the turning point in the history of the European knowledge about the ultimate source of the most expensive spices in the sixteenth century: cloves and nutmegs. Although Nicolò de Conti was the first European to report the existence of the Moluccas and Banda (*Sandai* and *Bandan*) after his travels (1419-1444), the first recorded European to have set foot on both archipelagos was the Italian Ludovico Varthema, whose *Travels* (1503-1508) were first published in Rome in 1510. Varthema claimed to have departed from Malacca and visited *Bandan* and *Monoch* (Moluccas), to whom he explicitly assigns the source of nutmegs and cloves respectively<sup>55</sup> and, as we will see, his report of the Spice Islands would have influence in Martin Waldseemüller’s *Carta Marina Navigatoria* (1516).

Malacca was captured by the Portuguese in 1511, and almost immediately, the viceroy of India, Afonso Albuquerque, dispatched a small fleet of three vessels to the Spice Islands in an attempt to give the ultimate step towards the native source of cloves, nutmegs and mace. The fleet, under the command of António de Abreu and guided by Javanese pilots, would eventually reach Banda in 1512, purchasing cloves and nutmegs and then returning to Malacca in December of the same year. One of the pilots of the expedition was **Francisco Rodrigues**, author of a *Book (Livro)* about the voyage dated **1513**, which contains, among others, the earliest European maps of the Spice Islands group based on direct observation, not specifically by Rodrigues himself but probably reported by javanese

<sup>55</sup> *The Travels of Ludovico di Varthema*. Edition by G. P. Badger (1867): pp. 243-246.

or malay pilots. As mentioned before, Abreu and Rodrigues reached Banda but not the Moluccas. Banda has the legend, “*The islands of Banda where the maces grow*” (*Ilhas de banda Homde Naçem as maças*), and in the Moluccas we read, “*these four blue islands are those of Maluco where the cloves grow*” (*estas quatro Ilhas Azuis ssam as de malluquo homde naçe ho crauo*) (fig. 15).

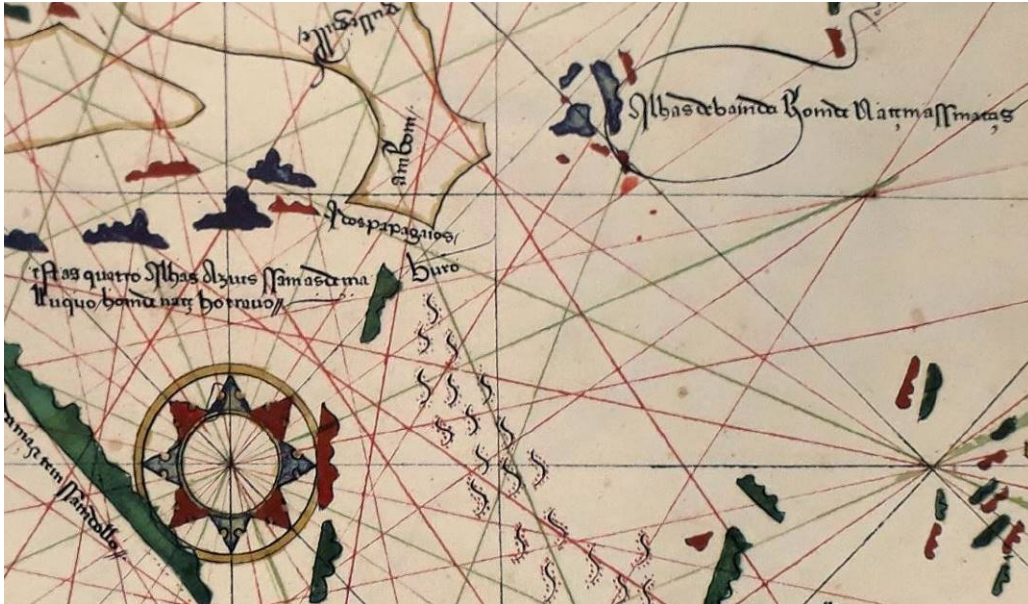


Figure 15: Detail of the chart of the Eastern part of the East Indian Archipelago. Book of Francisco Rodrigues. Fol. 37. Bibliothèque de l'Assemblée nationale (Paris), ca. 1513. Image available online at <http://archives.assemblee-nationale.fr/bibliotheque/manuscrits/002/index.html>. The image, originally oriented to the North, has been rotated with the East at the top for a better reading of the legends on the Moluccas (the “four blue islands” on the left) and Banda (upper right corner).

When Abreu’s fleet was returning from Banda to Malacca, a junk commanded by Francisco Serrão was shipwrecked and lost contact with the rest of the ships. However, he and his crew managed to find the way to the Moluccan island of Ternate, one of the clove islands. Thus, Serrão became the first European to settle in the Moluccas. The letters that Serrão sent to his friend Magellan from Ternate would play an important role in the making of Magellan’s plan to reach the *Especiería* sailing westwards.

The next milestone in the representation of the Spice Islands was the *Carta Marina Navigatoria* (1516) of Martin Waldseemüller, a world map formed by 12 map sheets of which only one example survives. Waldseemüller is also well known for his *Universalis Cosmographia* (1507), the first map to include the name *America*, heavily based on a world map by Henricus Martellus similar to that preserved in Yale, which contains many legends and toponyms about spices, but without adding new relevant information on this topic to that of the ancients or Marco Polo. However, the *Carta Marina* shows the first representation of the Moluccas and Banda in a printed map. Waldseemüller, taking the information from a printed German account of the travels of Varthema published in 1515<sup>56</sup>, places, not very accurately and far from their correct location, the islands of *Monoch* and *Bandam* with

<sup>56</sup> For a detailed study on this map and its legends, see Chet Van Duzer (2020), *Martin Waldseemüller’s ‘Carta Marina’ of 1516*.

legends about cloves and nutmegs respectively<sup>57</sup> (fig. 16). The importance of the spice trade was so high in the years immediately after the discovery of the Spice Islands that almost half the map sheet dedicated to the East Indies archipelago is filled by a cartouche on the spice trade in Calicut (system of weights, currency used, sources and prices of many different spices and other goods). The title is “*The more important places from which spices are brought to Calicut, the most famous market city of all*”<sup>58</sup> (fig 16).



Figure 16: Map sheet 12 of Martin Waldseemüller’s *Carta Marina Navigatoria* (1516). Library of Congress. Legend about the spice trade (left) and image zoomed for *Monoch* (“*This island of Monoch, together with those nearby, are the only ones that produce the clove tree (...) The clove tree is not cultivated, but grows wild. From where it is carried to Malacca and from there to the West*”) and *Bandam* (“*Only this island produces nutmeg and mace (...) The nutmeg tree is not cultivated but grows wild*”).

There **nautical chart of the Indian Ocean** attributed to **Pedro Reinel ca. 1517** is the first regional map to show the Moluccas and Banda in a relatively correct location within their geographical context. Although the original map at Munich was lost during an air raid in 1945, fortunately, the German artist Otto Progel (1815-1887) produced a hand-painted copy of the original in 1836, which is now in Paris, Bibliothèque nationale de France. The East Indies archipelago is schematically represented as an arc between Sumatra and the Moluccas, which corresponds to the route frequented, and thus known, by Portuguese merchants (fig. 17). The Moluccas are labelled “*Islands of Maluco where there are cloves*” (*ilhas de maluco donde a o cravo*) and Banda has two related texts, “*Islands of babay. Here there is mace*” (*ilhas de babay; aquy a aç mazis*). There is a very similar nautical chart in the British Museum also attributed to Pedro Reinel and dated between 1518 and 1522<sup>59</sup> with almost the same inscriptions, “*ilhas de maluco donde a o crauo*” and “*Ilhas de babane; aqui a as maças*”.

<sup>57</sup> Ibid: pp. 143-144.

<sup>58</sup> Ibid: pp. 145-146.

<sup>59</sup> For more information on 1517 and 1518 charts and discussion on the dates see, Cortesão and Texeira da Mota, *Portugaliae Monumenta Cartographica* (1960), reprinted 1987. Vol. I: 33-36, and Cortesão, A. (1936), *A hitherto unrecognized map by Pedro Reinel in the British Museum*. The Geographical Journal, vol. 87, no. 6.

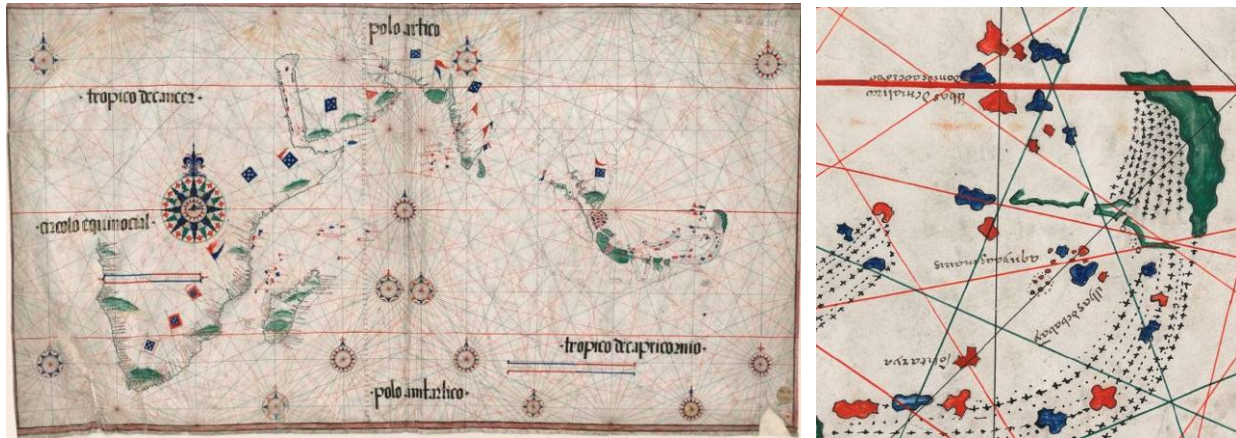


Figure 17: Otto Progel’s facsimile (1836) of the chart of the Indian Ocean by Pedro Reinel (ca. 1517) and detail of the Moluccas and Banda groups with the texts (upside down): “*ilhas de maluco donde a o cravo*” and “*ilhas de babay; aquy a aç mazis*”. Source gallica.bnf.fr / Bibliothèque nationale de France, département Cartes et plans, CPL GE AA-565 (RES).

The **planisphere** attributed to **Jorge Reinel ca. 1519**, known as **Kunstmann IV**<sup>60</sup>, is the earliest world map showing the Moluccas. Like Pedro Reinel’s chart of 1517, the original planisphere at Munich disappeared at the end of the II World War, but it survives in photographs and in another hand-painted facsimile by Otto Progel (1836), now at the BnF (fig. 18). Kunstmann IV is probably the map seen by the Portuguese consul in Seville, Sebastião Álvares, in 1519, and reported in a letter to King Manuel to show the Moluccas –a Portuguese secret– and to be the model for other nautical charts made for Magellan-Elcano expedition<sup>61</sup>. The importance of the map is to represent the updated official known world at the Spanish court just before Magellan’s departure, as well as to place the Moluccas in the left half of the map, that is, in the Spanish hemisphere according to the Treaty of Tordesillas –something with an obvious political purpose–. The Moluccas are labelled, “*Islands of Maluqua, where the cloves come from*” (*ilhas de maluqua donde vem ho crabo*).



Figure 18: Otto Progel’s facsimile (1836) of the Kunstmann IV (ca. 1519) by Jorge Reinel and detail of the Moluccas and their legend: “*ilhas de maluqua donde vem ho crabo*” Source gallica.bnf.fr / Bibliothèque nationale de France, département Cartes et plans, CPL GE AA-564 (RES)

<sup>60</sup> There is a facsimile and book of study by Taberna Libreria (2019), *La primera vuelta al mundo*.

<sup>61</sup> Torre do Tombo. *Corpo Cronológico*, P. 1ª, Maço 13, Doc. 20

The **Atlas Miller of 1519**, also attributed to the **Reinels**, contains a nautical chart that is worth mentioning. The folio 4.v. represents the Moluccas and Banda. The Moluccas, north of the equator, are labeled *Malucus Insule* and have a Portuguese flag on them. North of the archipelago, a Latin legend says, “Islands of the Chins. In these islands they extract a great amount of gold and silver, and besides of the abundance of wheat and other fruits, there is much pepper, cinnamon, cloves, sandalwood, nutmegs and all kind of spices, and in general, a king reign on each of them” (fig. 19). The legend does not fit exactly to the Moluccas and Banda, except for the cloves and nutmegs and it seems to be a vague reminiscence of the “7459” islands in Marco Polo’s Sea of Chin. However, the most surprising features of this map are the long arc of reefs and the continental land mass that block the access to the Moluccas coming from the East. Seeing these enormous mistakes, unconceivable for the skilled Portuguese cartographers of 1519, Alfredo Pinheiro suggests that the Atlas Miller could have been a wedding present from the King Manuel of Portugal to his wife, Leonor, sister of the King Charles I of Spain, with the aim of serving as a propaganda weapon to confuse and discourage the Spaniards to undertake Magellan’s plan for reaching the *Especiería* sailing westwards<sup>62</sup>.

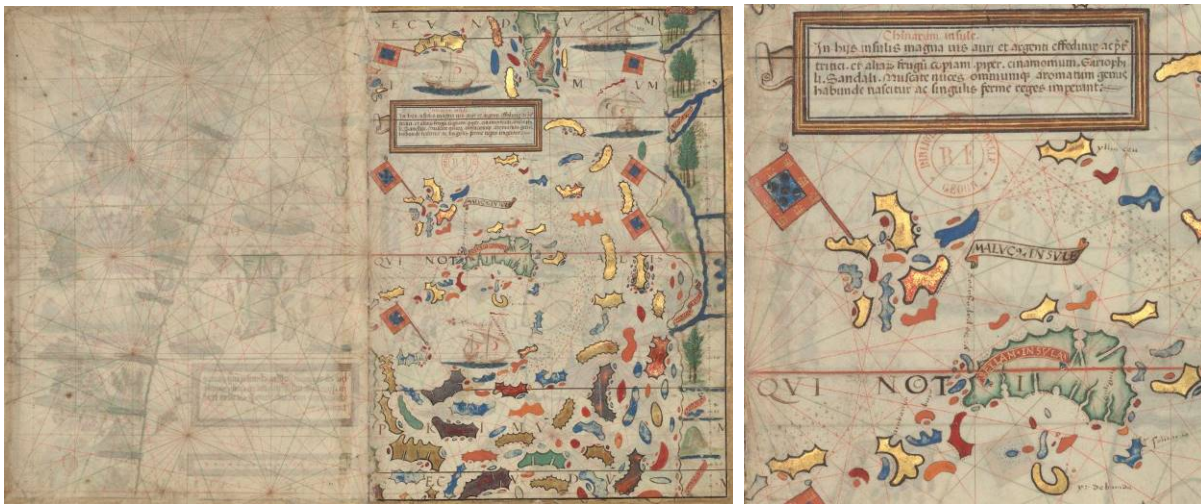


Figure 19: Nautical chart (left) and detail of the Moluccas and Banda (right) in the Atlas Miller (fol. 4. v.). The Portuguese flag on the *Malucus Insule* claims the sovereignty for Portugal. Source gallica.bnf.fr / Bibliothèque nationale de France, département Cartes et plans, GE DD-683 (4 RES).

## 8. Elcano’s arrival in the Moluccas, the First Circumnavigation and its cartographic aftermath

Magellan could not see his dream of reaching the *Especiería* come true because he died in combat on 27 April 1521 in Mactan, a small island close to Cebu, in the Philippines. After some turbulent events including the assassination of twenty-seven crewmembers caught in a trap at Cebu and several changes in the command, Elcano became the captain of the *Victoria* in September of 1521. The two surviving ships, *Victoria* and *Trinidad*, finally arrived at the Moluccan island of Tidore on 8 November. Once there, they purchased as much cloves as they could to fill the hold of the ships

<sup>62</sup> Pinheiro Marques, A. (2006). *El excepcional valor artístico del Atlas Miller*: pp. 209-216. In, *Atlas Miller*. Moleiro. Barcelona

before sailing back to Spain. On 15 December, both ships attempted to set sail from Tidore but the *Trinidad* had a leak in the hull and had to remain under repair several weeks. Under these circumstances, the commanders took the decision that would change the history of explorations: the *Trinidad* would come back to Spain crossing the Pacific and obeying the Spanish King's instructions of not sailing through Portuguese waters –she would never eventually return–. On the other hand, the *Victoria* would attempt to return sailing westwards and following the Portuguese *tornaviaje*. The *Victoria* alone finally departed on 21 December 1521 commanded by Juan Sebastián Elcano. More than eight months later, they arrived in Sanlúcar de Barrameda on 6 September 1522, closing the circle of the first circumnavigation and bringing for the first time first-hand cartographic information about the Strait of Magellan, the vastness of the Pacific and the global location of the East Indies.

The Spanish arrival in the Moluccas did not end the discussions on the sovereignty over the archipelago. Both Iberian Kingdoms continued defending their respective positions and rights over the Spice Islands. In spite of the technical meetings intended for reaching an agreement in Badajoz-Elvas (1524), the issue would not be solved until the Treaty of Zaragoza (1529) by which the antimeridian would move 17° east, thus making the entire Moluccan archipelago lay on the Portuguese side, for a price of 350.000 gold ducats.

Between 1522 and 1529, different copies of the Spanish *Padrón Real*<sup>63</sup> –the official and secret map of the known world– served as diplomatic presents and propaganda tools. Following the traditional layout of the royal patrons, the center of the planisphere was the line of Tordesillas, leaving the Portuguese hemisphere on the right and the Spanish on the left. The political nuance was to claim the Moluccas for being in the Spanish hemisphere, just as we have seen before in Reinell's planisphere of 1519. Moreover, the royal patron did extend more than 360° in longitude, creating a small overlap by repeating the representation of the Moluccas in the easternmost and westernmost sides of the map, adding a legend or flag that remarked twice the Spanish sovereignty over the archipelago. Thus, in the copy of the *Padrón Real* by Giovanni Vespucci<sup>64</sup> dated 1526 (Hispanic Society of America. New York) we can see the Moluccas twice, in both sides of the map with a Castilian flag on them and the legend, “*Island of Jilolo [Halmahera] and Maluco where the cloves and spices of the King of Castile grow*” (*ysola de Jilolo et de maluco adonde naçe lla Speçiería et el clavo del rey de castilla*) (fig. 20).

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<sup>63</sup> There are several surviving copies of the *Padrón Real* delivered as presents for foreign dignitaries, for instance: Biblioteca Reale di Torino (1523), Biblioteca Estense Universitaria (“Castiglioni”, 1525), Biblioteca Medicea Laurenziana (“Salviati”, 1525), Hispanic Society of America in New York (Vespucci, 1526), Weimar Grand Ducal Library (1527 and 1529) or Biblioteca Apostolica Vaticana (Borgia, 1529). See, Manso, C. (2018), *La cartografía de la expedición de Magallanes y Elcano. V Centenario de la primera vuelta al mundo*. Ministerio de Defensa: 284-293

<sup>64</sup> Facsimile edition and study by Ediciones Grial. Valencia. 1998



Figure 20: *Padrón Real* of Giovanni Vespucci (1526) and detail of the Moluccas in the westernmost side of the map. The legend below the Castilian (i. e. Spanish) flag says, “Island of Jilolo [Halmahera] and Maluco where the cloves and spices of the King of Castile grow”. The Moluccas are repeated in the easternmost side of the map, also with a Castilian flag on them. Hispanic Society of America. New York.

## 9. Conclusions

The first circumnavigation of the world, considered the greatest feat in the history of explorations, was far from being encouraged only by the geographical curiousness of Renaissance humanists. It was not even initially intended to occur, because the instructions of the Spanish expeditionaries were to find the *Especiería* and return to Spain following the same route backwards or, at least, an eastward route crossing the Pacific back to Central America. Elcano’s decision to follow the safer and already known Portuguese route was the crucial moment of the voyage for it allowed sailing completely around the world for the first time. The nowadays-unbelievable value of the spices in the sixteenth century –specially cloves and nutmegs– was the force pushing forward the expedition. Since ancient times, spices were associated to semi-mythical sources in the East, only known by vague witnesses and references. The increasing geographical knowledge in Europe of those distant lands progressively shed light on some of these mysterious regions until the final discovery and mapping of the furthest sources of all, the Spice Islands. The history of the quest for the much demanded and expensive spices is also the history of how they appeared in maps and an essential part of the history of cartography until the beginning of the sixteenth century.

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