Title: *Leonardo da Vinci Globe Gores*
Date: 1514
Author: Leonardo da Vinci
Description: The contribution of Leonardo da Vinci1 to many spheres of human endeavor are too well-known to need enumeration. However, one obscure aspect of his oeuvre is a complete world map, or *mappamundi*, to be found among his papers in the Royal Library, Windsor collection. In an 1864 article titled *Leonardo, da Vinci, 1452-1519, Memoir on a mappemonde by Leonardo da Vinci, being the earliest map hitherto known containing the name of America: now in the royal collection at Windsor*, Richard Henry Major analyzed this unusual set of eight globe gores found in the Royal Collections of Windsor Castle and attributed them to none other than Leonardo da Vinci, but with very little more reason for the assignment than the fact that they were found in a collection of papers in the handwriting of that famous artist. The gores are drawn as equilateral triangles, each representing one eighth of the earth's surface, not as bi-angles, which is the usual form for early globe gores. Major described the map as the oldest known on which the name *America* appears, giving as the probable date of construction the year 1514, which date is thought by Henry Harrisse to be five or six years too early. Such a distinction as was claimed for the record of the name *America* by Major, being likewise assigned at various times to other early maps, has at last been definitely fixed as belonging to the world map of Waldseemüller of 1507 *(#310).* The outlines of the New World bear a resemblance to those found in the *Lenox* and the *Jagellonicus* globes *(#314).* The North American region is represented by two islands, one of which bears the name *Bacalar*, the other *Terra Florida*. South America, a large island, has conspicuously inscribed the name *America*, together with a few prominent coast names. These gores are chiefly of interest by reason of their peculiar form.

The points of distinct priority which he hoped to establish are: first that it is the earliest map yet made known to the world on which the name of *America* stands inscribed; secondly that it is the earliest known map on which the severance of the western coasts of America from their previously supposed continuity with Asia is recognized; thirdly that it is the only map, as yet known, which contains an indication of the early fancied existence of a great southern continent anterior to the discovery of

Magellan's Straits, after which, though at some distance of time, that supposition was assumed to be a reality, and laid down upon maps as an indefinite continuation of the then discovered land of Tierra del Fuego.

As discussed above, the da Vinci globe is drawn in eight equal parts; each part being the eighth of a supposed globe represented in a plane; the lines of separation being the equator, and two equidistant meridian circles. These parts, of course, thus form equilateral triangles, each side of which is an arc of a circle, of which the opposite point is the center. The diameter of these triangles is exactly five inches. The usually adopted form of orientation is used, as shown by the word *Cima* being placed between the four converging points at the north, and the words *La Bassa* between the corresponding points at the south. The scale is very small; but, though the insertion of names of places is consequently by no means abundant, a certain amount of care has been given to the delineation of the outline of the then known parts of the world. It has no meridians or parallels of latitude; but that is not to be wondered at, for numerous manuscript maps were made at that time, which have now disappeared, but which were drawn up, like this one, with the object of giving the picture of the discoveries without supplying navigators with any information as to the dangers or courses by the routes. The date that Major assigns to the map is 1513-1514.

It is obvious that on a map of so small a scale we cannot hope to find any points of minute interest in the delineation of those parts of the world which were at that time comparatively well known. In the easternmost parts of Asia we see *Cathay* and *Mangi* of Marco Polo, on what is freely described as the *Smanrni Situs*, and also Marco Polo's *Zipangu*, here misspelled *Zipugna*, intended to represent Japan. In the South Seas we have an indication, but without names, of Sumatra, and the Sunda Isles, which may have been gathered from Marco Polo, but which islands we also know from Barros and Galvao to have been visited, at the close of 1511, by the Portuguese captains Antonio de Breu and Prancisco Serrao, who were sent out to Banda and Malacca by Albuquerque, and who passed along the east side of Sumatra to Java, and thence by Madura, Bali, Sumbavaj Solor, & c. to Papua or New Guinea. Thence they went to the Moluccas and to Amboyna.

The peninsula of Hindustan is laid down with tolerable correctness, not differing much, although with far fewer insertions of names, from its representation in the 1511 map of Bernardus Sylvanus *(#318)* of Eboli in the kingdom of Naples, when the discoveries of the Portuguese had already made them acquainted with the outline of that country. In Africa we find, as might be expected, the west coast delineated with tolerable accuracy, but with comparative emptiness of description on the eastern side; the only internal feature being the river Nile, with the river and two lakes from which it was supposed to take its source, laid down as in Ptolemy and the Portuguese maps of the time, in a latitude much nearer to the Cape of Good Hope than to the equator. But as, at the time that this map was made, the passage of the Portuguese to India by the Cape of Good Hope had become a beaten track, it is not upon the delineations either of Asia or the west coast of Africa that we need rest for evidence as to the period of its construction, unless indeed we should find amongst the few names laid down on those countries any that might betray a later period than that which we should otherwise be led to ascribe to it; but this, upon examination, proves not to be the case.

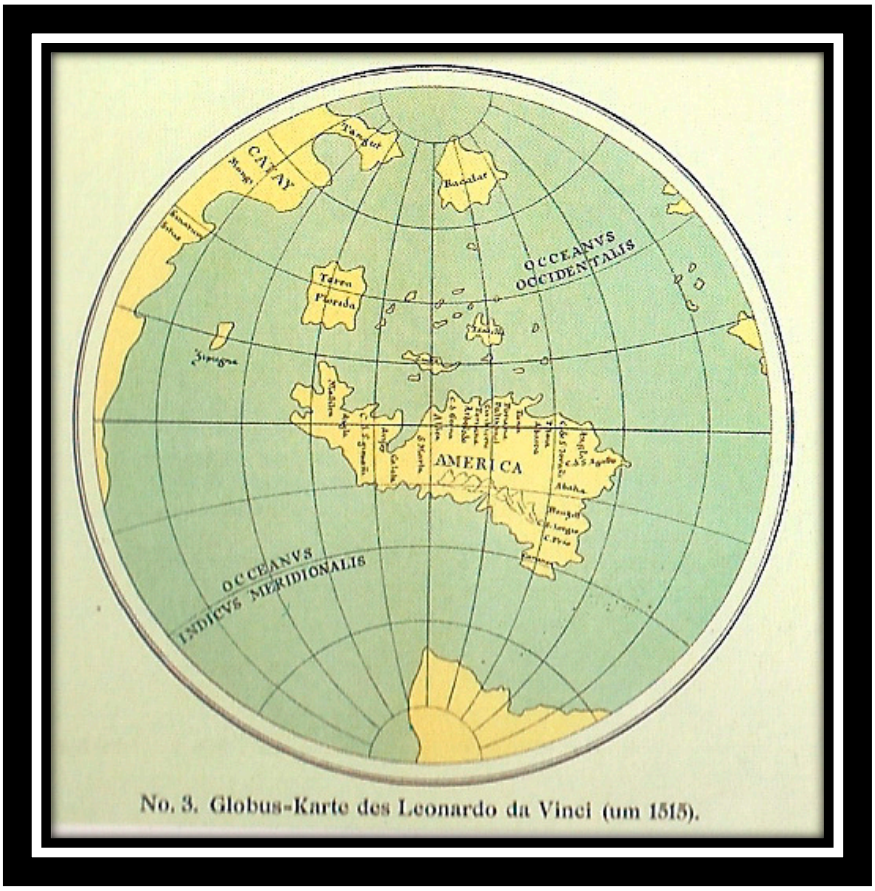
On the east coast of Africa, we have but three places mentioned, *Sapall* [Sofala]; *Inclind*, a manifest mis-copying for Melinda; and *Abassia* or *Abyssinia*; but if these names are few, they are full of interest in connection with the period. Melinda was the

northernmost point attained by Vasco da Gama in his northward passage along that coast. It was on the 15th of April, 1498, that he arrived there, and from that arrival may be traced the successful accomplishment of the magnificent dream that first had birth in the brain of the never-to-be-forgotten Prince Henry of Portugal, namely, the attainment of the coast of India by the rounding of the Cape of Good Hope. In the sovereign of Melinda, Da Gama found a friend and a helper beyond all price; he supplied him with a Guzerat pilot, named Malemo Cana, or Canaca, who was not only perfectly acquainted with the navigation of the Indian Ocean as known at that period, but entered into the service of the Portuguese with so much loyalty and good faith that, after leaving the coast of Africa on the 28th of April, he brought them on the 17th of May in sight of that India which had been the subject of such ardent longings and such earnest efforts on the part of his countrymen for nearly a century. It was on Sunday the 20th of May that, under the directions of his skilful pilot, Da Gama anchored off Capocata, two leagues below Calicut.

Thus much for the east coast of Africa with respect to Madagascar itself we have the island laid down, but without a name. It was in 1500 that the Portuguese, in their reconnaissance of the coast of Zanzibar, became acquainted with the island of Madagascar, although Marco Polo had previously spoken of it under the name of *Magaster*. It received its name of *S. Lorenzo* from the visit of the Portuguese Lorenzo Almeida, but it was not until 1506 that its coasts and capes and harbors were examined by Tristan d'Acunha. We also find, on the map, what would seem, to judge from their relative position with regard to the north point of Madagascar, the Aldabra Islands; but, if the size rather than the exact position of the islands were to be accepted as a criterion, we might infer that the Comoro Isles were intended. Further north, though still without name, we find what is doubtless meant for the Seychelles Islands. Of the Mascaren Islands there is no indication whatever. Research has hitherto been fruitless in the attempt to establish the exact date of the discovery of these islands. Various dates have been assigned, but in none of the Portuguese authors' who address of the exploits of Pedro Mascarenhas in the Portuguese conquests in India does one find any allusion to the discovery of these islands. One thing, however, is certain, that these islands were discovered, not only before the period of the *da Vinci* globe gores, but also before 1507, inasmuch as they are laid down in the map of Johann Ruysch, in the 1508 edition of Ptolemy *(#313),* where Mauritius bears the name of *Dinarobin,* and Bourbon that of *Margabin*, which means "western," as rightly describing its more western position.

It is in America, the scene of active and progressive exploration, that we find the special value and interest of the *da Vinci* globe gores, as well as the means of more clearly fixing its approximate date. Attention should be paid to the fragmentary parts of North America, indicated by what is represented on the map as islands, viz.: the names of *Bacalar* and *Terra Florida*. In the former name we have no difficulty in tracing the *Terra de Bacalaos* [Country of the Codfish]. The name of *Bacalaos* is the earliest we find applied to any part of North America subsequently to the Scandinavian voyages. It has been advanced by Father Cordeiro, in his *Historia Insulana*, that it was discovered in 1463, twenty-nine years before the first voyage of Columbus, by Joao Vas Cortereal, a nobleman of the household of the Infant Don Ferdinand of Portugal. Against the correctness of this statement we have the reasonable argument of the Baron von Humboldt, that, had this been the truth, so important a fact would scarcely have been omitted by Martin Behaim in the minutely detailed notes which are inserted in the globe which he constructed in 1492, and which is now at Nuremberg *(#258).* The solidity of this

argument is confirmed by the fact that Cordeiro makes Cortereal to have been appointed Governor of Terceira on the 12th of April, 1464, while it is a certain fact that Jobst de Hürter, the father-in-law of Behaim, only a few years after, went to the Azores, with the rank of Governor of the Flemish colony of Payal. The truth would rather seem to be that the name of *Bacalaos,* which in the Basque language means codfish, was first given to Newfoundland, and then also to the countries which they found near that island, by the Biscayan fishermen, who frequented those coasts for codfish as early as the year 1504. The Biscayans pretend that a countryman of theirs, named Juan de Echaide, discovered the shores of Newfoundland many years before the New World was known, but there is no authority to prove it.



No. 3. Globus-Karte des Leonardo da Vinci (um 1515).

The question, as to whether England or Spain may claim the priority in the discovery of Florida, has given rise to many contradictory statements. For the English, the honor has been claimed for Sebastian Cabot; and by the Spaniards, for Ponce de Leon. But, whatever may have been the southernmost point reached by Cabot in coasting America on his return, it is certain, that he did not land in Florida, and that the honor of first exploring that country is due to Juan Ponce de Leon. This cavalier, who was governor of Puerto Rico, induced by the vague traditions circulated by the natives of the West Indies, that there was a country in the north possessing a fountain whose water restored the aged to youth, made it an object of his ambition to discover this marvelous region. With this view, he resigned the governorship, and set sail with three

caravels on the 3rd of March 1512. Steering NWN he came upon a country covered with flowers and verdure and, as the day of his discovery happened to be Palm Sunday, called by the Spaniards *Pascua Florida*, he gave it the name of *Florida*. He landed on the 2nd of April, and took possession of the country in the name of the King of Castile.

Cuba is here, for the first time, made an island. Columbus died in the belief not only that the newly found continent was part of Asia, but also that Cuba was part of Japan, or the *Zipangu* of Marco Polo. It was not till 1508, two years after his death, that Captain Sebastian de Ocampo proved it to be an island by sailing around it by the orders of Nicolas de Ovando. The *Isabella* of our map is manifestly intended for *Hispaniola*, although it is mistakenly so-called, as that name was originally given by Columbus to *Saometo*, now known as Long Island.

The other West Indian islands, not indicated by names, may all be without hesitation accepted as amongst the discoveries of Columbus.

With respect to the delineation of South America on the map of Leonardo, the peculiar form of the map itself renders it difficult to trace the form and sequence of all the names which I shall have to refer to, I will, for clearness' sake, take them in the order in which they occur on the north coast of South America westward from St. Augustine, and in a second series along the east coast of that continent southward from the same point.

Of Cape St. Augustine itself it can simply be said that it was first seen in January, and again in April, of the year 1500 by Vicente Yanez Pinzon, Diego de Lepe, Alonzo Yelez de Mendoza, and Pedro Alvarez Cabral. The word *Angla*, which seen first in passing westward from Cape St. Augustine along the northern coast of South America, is too vague to call for comment, as in Spanish it simply means "a cape," and differs from the similar Portuguese word *Angra*, which is "a creek, bay, or station for ships".

The next name which presents itself is *C. di S. Giovanni*, for which I have not succeeded in finding any explanation either in history or in maps within a century and a half of the period of our map; but in the *Nova et accurata Brasilise totius Tabula*, by J. Blaeu, Amsterdam, 1662, and in subsequent maps, there is *I. S. Juan*, about 2° west of Maranhani, which is about the position of the *S. Giovanni* of Leonardo's map.

The next name, *Plaia*, is doubtless the equivalent of the Portuguese word *Praya*, which simply signifies "a shore". The *Tanabacoa* of Leonardo's map is identified with the *Tamaragua* of the map of Johann Ruysch, in the 1508 edition of Ptolemy *(#313),* where it is represented as an island, which, in the *Tabula Terre Nove* by Hylacomilus, inserted in the 1513 edition of Ptolemy published at Strasburg *(#320),* has its name reduced to *Eiqua,* and is in all probability the island of Aruba.

Poriana, the name which next presents itself, is a mis-spelling for Curiana, the coast where pearls were found, and which comprised the coast of Cumana and the Gulf of Cariaco, as is shown by a passage in the stipulation of Hojeda with the Spanish sovereigns, where the expression occurs, *desde el parage de los Prailes, antes de la Margarita, fasta elParalJon, tierra que se llama Curiana,* i.e., From the neighborhood of the Prailes (islands off the north-east coast of Margarita) to the Parallon, (probably Cape Codera,) which country is called *Ouriana*. The discovery of this country had been attributed to Eodrigo Bastidas, in the voyage that he made with the pilot Juan de la Cosa, ranging from October, 1500, to September, 1502; but this claim was contested by Alonzo de Hojeda, who claimed the discovery for himself in his second voyage, which occupied from January, 1502, to January, 1503. Major's inference that *Poriana* is a mis-spelling for *Coriana* or *Curiana* is confirmed by the circumstance that the name is repeated further

westward, beyond the name *Ciribiceni*, which is manifestly Point Chiriviche, off the mouth of the River Tocayo, near Porto Cabello; for beyond this same point one finds a similar repetition of the name of *Coriana*, represented as explored in 1500 by Hojeda and Vespucci, in the map of the coasts of *Tierra Pirme*, drawn up by Colonel Codazzi to illustrate the routes of Columbus and contemporary navigators.

For the intervening name, *Palinmot*, Major finds an equivalent in the *Palinmete* of Codazzi, occupying the same position, but not in any preceding map or book.

Areolodo is a manifest mis-spelling for *Arboleda*, a grove or plantation of trees. *Grana* occupies the position of the peninsula of Paraguana, the Indian name of Cape San Roman, which protrudes twenty leagues into the sea. Herrera, who, a few lines after, speaking of *Cape de la Vela* yet further west, says that it was so named by Alonzo de Ojeda when accompanied for the first time by Amerigo Vespucci, long after that coast had been discovered by *el primer Almirante* Columbus. *Aldea* simply signifies a village or hamlet. Its occurrence in this place agrees with the account of the Bachiller Martin Pernandez Enciso, who is said to have accompanied Bastidas in his voyage along this coast. In his *Suma de Geografia*, printed in 1519, the first Spanish book which gives any account of America, Enciso says, *Desde Sancta Marta vuelve la costa al sur veynte leguas y en la vuelta [del] Cabo Sancta Maria esta Caria, que es la gente muy mala, y adelante esta Aldea grande* [From Sancta Marta turns twenty leagues south coast and around [the] Cape Sancta Maria this Caria, there are very bad people in this large village].

The next name that we encounter in our progress westward on the map of Leonardo is *Santa Marta* itself, which is the name of an important province lying eastward of the Rio Grande de Magdalena, and including the mountains of the same name. Vespucci and Hojeda did not sail so far westward in their voyage between May and September, 1499; but, as just shown from Enciso's account, this coast was visited in 1501 by Eodrigo de Bastidas. Herrera describes their route thus: *I pasaron por la ribera de la Mar que aora se Uama Santa Marta i Cartagena hasta la Oulata o Ensenada que es el Gulfo de TJraba, dentro del qual se contiene la provincia del Darien* [They passed by the coast which is now called *Santa Marta* and *Cartagena*, as far as the Culata or Ensenada, which is the Gulf of Tjraba]. This sentence at the same time supplies us with the explanation of the word *Calata*, the next that occurs on the da Vinci globe gores.

The name that next follows is exceedingly indistinct. It appears to be *Arifep* which may be intended for the Punto de Arecife, Anglice Reef Point, which is given in a similar locality on the fifth map of Kunstmann's *Atlas zur Entdeckungsgeschichte Amerikas, München*, 1859.

The next name is *C. de S. Giovanni*, which can best be illustrated by a quotation from Acosta's *Descubrimiento y colonizacion de la Nueva Granada*, in which he says, *El dia 25 [de Setiembre, 1502] fonded la expedicion en cierta isla que los indigenes Uamaban Quiriviri y Colon Husita, a mas de legua y media de distancia de Cariay, poblacion que estaba situada a las margenes de un gran rio (probablemente San Juan de Nicaragua)* [On the 25th of September, 1502, the expedition anchored off a certain island called *Quiriviri,* but which Columbus called *Husita*, at more than a league and a half's distance from Caria, an inhabited spot on the shores of a great river (probably San Juan de Nicaragua)].

The two remaining names are *Angla* and *Mastilca*; the latter may be construed to mean the Mosquito Coast, which was visited by Columbus during his fourth voyage in the month of September, 1502. In this voyage Columbus explored the coast from Honduras to the Puerto de Mosquitos, at the western extremity of the Isthmus of Panama.

Now for the names as they occur on the east coast of South America, southward from Cape St. Augustine. The first name that presents itself is *Abatia*. This word, which is a mis-reading for *Bahia*, an abbreviation for *Bahia de todos os Santos*, is the most important of any on the face of the map for Major because it provides him with the most valuable link in connecting the map with the voyages of Vespucci. The next designation that occurs is that of *Brazil*. The name at first given to the newly discovered land of South America was *Terra de Santa Cruz*, or *Terra Sanctse Crucis*. The precise period of its replacement by that of *Brazil* is not known, but that it was before 1507 is shown by the occurrence of the latter name in Ruysch's map *(#313),* which was made in that year, although not published till 1508. The word "brazil," which properly signifies "red dyewood," was known in Europe long before the discovery of the New World, as is shown by two documents relating to tariffs of excisable goods. One of them is from Ferrara, with the date of 1193; the other from Modena, with the date of 1306. In them Brazil is mentioned among other articles of merchandise. It is a mistake, therefore, to suppose that the red dye-wood known as brazil-wood took its name from the country now called Brazil in South America. The converse was the case; for when the Portuguese discovered that that wood was growing in great quantities, and of excellent quality, in the newly-discovered country to which Pedro Alvarez Cabral had, when he first reached it in 1500, given the name of *Terra de Santa Cruz*, they within a very few years after gave the name of *Brazil* to the country itself. This same name had already been given on maps of the 15th century to an island near the Azores, which has been generally supposed to be equally imaginary with the islands of *St. Brendan* and *Antillia*, also laid down on maps of that period.

The next name is C*ape S. Jorgio*. The earliest occurrence of this name is in the form of *Yilla de San Jorge* in a corresponding position on the map of Brazil published by Jan Blaeu, in Amsterdam, 1662; and Father Cazal mentions the place in his *Corografia Brazilica*, but without allusion to the period at which the name was given.

The last name which occurs on the east coast of South America is *Cananea*, which lies in 25° 5′ S latitude, and by its position presents great difficulties with reference to the latitudes stated by Vespucci to have been attained by him in the last two of his four voyages. In his third voyage he asserts that he reached 52° S. In his fourth he reaches only the 18th degree. In neither of his letters does he make mention of *Cananea*, even as a resting-place, much less as a place of which he took possession in the name of the King of Portugal; and yet it stands as a remarkable fact, that not only on the map of Leonardo, but on the 1508 map of Ruysch; on the *Charta Marina Portugallensium*, published 1513; and on the map of Apianus, dated 1520 *(#331),* and published in the *Polyhistoria of Julius Solinus*, in the same year—all of which, by the repetition of a mistake, betray, as will be seen, a common origin from Vespucci—this name of *Cananea*, with slight changes in the spelling, is given as the southernmost place on the coast, known to the compilers of those maps, as having been visited and named by any explorer. It is true that Ruysch adds a legend apropos of the third voyage of Vespucci, to the effect that the Portuguese sailors had explored this part of the land, and had reached 50° S latitude without coming to the end of the continent; but, again, from Vespucci himself we get no intimation of a landing at *Cananea*. This is the more remarkable as a *pedrao* or monumental stone bearing the arms of Portugal, but without the towers in the bordure, and with the date of 1503, was discovered in 1767 by Colonel Alfonso Botelho de Sousa, in the Island of Cardoso, off the Bar of Cananea ; and it is well known to have been the custom in more early days to place such boundary-marks to establish the right of possession.

The da Vinci drawing possesses one feature peculiar to itself, with respect to the indications of discovery westward and northward as to the continent of America. We see nothing of North America beyond the two supposed islands of *Bacalar* and *Florida*; nothing of the coasts of Central America beyond the shores of Honduras; and here we find the coast line erroneously continued from the Caribbean Sea into the Pacific, implying the certainty of the discovery of a separation of the newly-found continent from Asia. Major feels bound to accept this fact as an indication of the map being posterior to the discovery of the Pacific by Vasco Nunez de Balboa, on the 25th of September, 1513. The earliest known map showing a similar indication is that of Johan Schöner printed at Bamberg, 1515 *(#330)*, but which at the same time presents this great difference from Leonardo's map, that it contains the north coast of the Gulf of Mexico, and thus manifestly indicates a period considerably later.

The map shows indications of having been first drawn in pencil, suggesting the great likelihood of its being a copy from the work of another, and by an Italian, since the names in Spanish are not only Italianized in the spelling, but are in some cases so grossly misspelled as to indicate misreading of names from their form as written in Spanish, and in others the misapprehension of the form of name as uttered verbally. Of the first kind of misspelling we have examples: in the word *Inclind*, on the east coast of Africa, a manifest misspelling for "Melinda," the three strokes of the "M" being mistaken for "In," and the "e " for a "c.' *Areolodo*, on the north coast of South America, for "Arboleda," the third letter, "b," of the Spanish being mistaken for an "e." Of the latter kind we have an instance in the sound of "Mosquito," on the coast of Honduras, being altered into *Mastllca*, and "Tamaragua" into *Tanabacoa*.

Major writes about the probable personal connection between the two distinguished Florentines, Leonardo da Vinci and Amerigo Vespucci through various existing correspondence. Another potential connection between the map of the former and the writings of the latter —a connection the certainty of which is established by that surest of all tests, the repetition of a mistake. It has been seen that on the east coast of South America occurs the word *Abatia*, the real interpretation of which is the well-known name of *Bahia de todos os Santos*. It is fortunate, for the avoidance of prolixity, that the examination of the origin of this mistake leads us, at the same time, into the history of the first suggestion of the name of America.

Until the year 1832, the earliest known manuscript map containing the delineation of America was one of the date of 1527, now in the military library at Weimar; it is earlier by two years than the map of Diego Ribero *(#346)*, in the same library. In 1832, however, was discovered the now famous map of the pilot Juan de la Cosa *(#305)*, who accompanied Columbus in his second voyage in 1493, and Hojeda and Vespucci in their expedition of 1499. It was this Juan de la Cosa of whom, according to the testimony of Bernardo de Sbarra, in a suit against Diego Columbus, the admiral complained that being *hombre habil, andaba diciendo que sabia mas qued* [skilled man, he was saying he knew more than him]. In this map, which is dated 1500, we find the earliest known delineation of the new world.

In 1508, in an edition of Ptolemy published at Rome, appeared the first engraved map containing the new world, by Johann Ruysch *(#313)*. It does not bear the name of *America*; but it is proved, in common with Leonardo's map, to have had a Vespucian origin, for it contains the remarkable word *Abbatia*. In 1509 the name of *America*, proposed by Waldseemüller in 1507, appears, as if it were already accepted as a well-known denomination, in an anonymous work entitled *Globus Mundi*, printed at

Strasburg in that year. This was three years before the death of Vespucci. Although, as Humboldt says, this work is anonymous, yet from the colophon, if not the author, at any rate from what quarter the book emanated. It runs thus, *Ex Argentina ultima Augusti, 1509. J. Gruniger imprimebat, Adelpho castigatore*. Now, this Adelphus was a physician, a native of Muhlingen, near Strasburg, who afterwards established himself in that city. But, as mentioned, in this same year, 1509, a re-issue of the *Cosmographise Introductio*, containing the first suggestion of the name of *America*, appeared from the press of this same Johann Gruniger, with the following words in the colophon, *Johanne Adelpho Mulicho, Argentinensi, castigatore*. *Mulicho* simply means native of Muhlingen. The coincidence suggests the suspicion that Waldseemüller, the author of the suggestion, is the author also of its adoption; but, in any case, the idea presented to the mind by Humboldt of the denomination being well known on account of its insertion in the *Globus Mundi*, receives a serious modification, for the original suggestion and its adoption two years later are thus shown to emanate, almost to a certainty, from the same quarter.

The first place in which we find the name of *America* used a little further a-field, is not, as has hitherto been stated by Humboldt and others, in the *Pomponius Mela* of 1522, but in the edition of that work of 1518. The passage itself is to the following effect: *Si Americam a Vespuccio repertam et earn Eoae Terrse partem quae terrse a Ptolemseo cognitse adjecta est ad longitudinis habitatse rationem referimus, longfe ultra hemisphserium habitari terram constat* [If America was discovered by Vespuccio and it's parts of the earth, which was added to the length of land from Ptolemseo cognitse habitatse accounts, long more hemispheres inhabited the land is clear], and occurs in a letter addressed by the editor Joachim Vadianus to Rudolphus Agricola at the end of his commentary on the ancient geographer, and this letter is dated from Vienna, 1512. One of the first maps of the New World, either engraved or manuscript, hitherto known with the name of *America* inserted on it, is a *mappemonde* by Appianus bearing the date of 1520 *(#331)*, annexed to the edition by Gamers of the *Polyhistoria of Julius Solinus* (Viennse Austr. 1520), and a second time to the edition of *Pomponius Mela*, by Vadianus, printed at Basle in 1522.

Despite Leonardo da Vinci's renown as a Renaissance man, and as a cartographer in particular, he is not generally acknowledged as authoring a world map (or *mappamundi*) of the geography of the world. Nevertheless, there is this world map among his papers in the Royal Library, Windsor, which is one of the very first maps to name the Americas, and has the correct overall configuration of the continents, including an ocean at the North Pole and a continent at the South Pole (at the centers of the left and right quartets, respectively). In an article entitled "Leonardo da Vinci's World Map" Christopher Tyler states at that time (as subsequently), there was a wide variety of projective conventions attempting to depict the curved surface of the globe onto the planar surface of a sheet of paper. By breaking the surface into eight octant petals in two florets, da Vinci developed a unique projection that had by far the most isometric mapping geometry to that date (although at the cost of a set of crosscuts that split some of the continents). This mapping makes it clear that, although da Vinci has the right general idea, he has substantially exaggerated the size of Europe and has the Americas much too far to the west (somewhere near Hawaii). Nevertheless, he shows India, Malaysia, China, Japan and even the Russian Far East peninsula in approximately the right proportions, implying that he must have had access to some information from sailors of the oriental sea routes. Remarkably, also, he has approximately the correct dimensions for both the Arctic Ocean and the landmass of Antarctica (at the centers of

the right and left florets, respectively), something achieved by no other cartographer of the era, or for the next two centuries.

This authorship it is not universally accepted, with some authors being completely against any minimal contribution from Leonardo, such as Henry Harrisse (1892), or Eugène Müntz (1899 - citing Harrisse authority from 1892). Other scholars accept explicitly both (map and projection: "…the eight of a supposed globe represented in a plane…"), completely as a Leonardo's work, describing the projection as the first of this type, among them Richard H. Major believing at the time that it was the earliest map hitherto known containing the name of "America", Hermann Grothe, John P. Snyder in his book *Flattening the earth* (1993), Christoher Tyler in his paper (2014) "Leonardo da Vinci's World Map", José Luis Espejo in his book (2012) *Los mensajes ocultos de Leonardo Da Vinci*, or David Bower in his work (2012) "The unusual projection for one of John Dee's maps of 1580".

Others also accept explicitly both (map and projection) as authentic, although leaving in the air Leonardo's direct hand, giving the authorship of the work to one of his disciples as Nordenskjöld states in his 1889 book *Facsimile-Atlas*. Although the authenticity of this world map has been questioned, Tyler states that there is an obscure page of his notebooks in the da Vinci *Codex Atlanticus* containing a sketch of this precise form of global projection, tying him securely to its genesis. Moreover, the same notebook page contains sketches of eight other global projections known at that time (early 16th), from the Roman Ptolomaic conic section projection to Rossellli's oval planispheric projection. Tyler's paper explores further remarkable aspects of the geometry and history of da Vinci's unique *mappamundi*.

Location: Royal Collections of Windsor Castle, London

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Facsimile produced by Dr. D. W. Larson, Emeritus Professor
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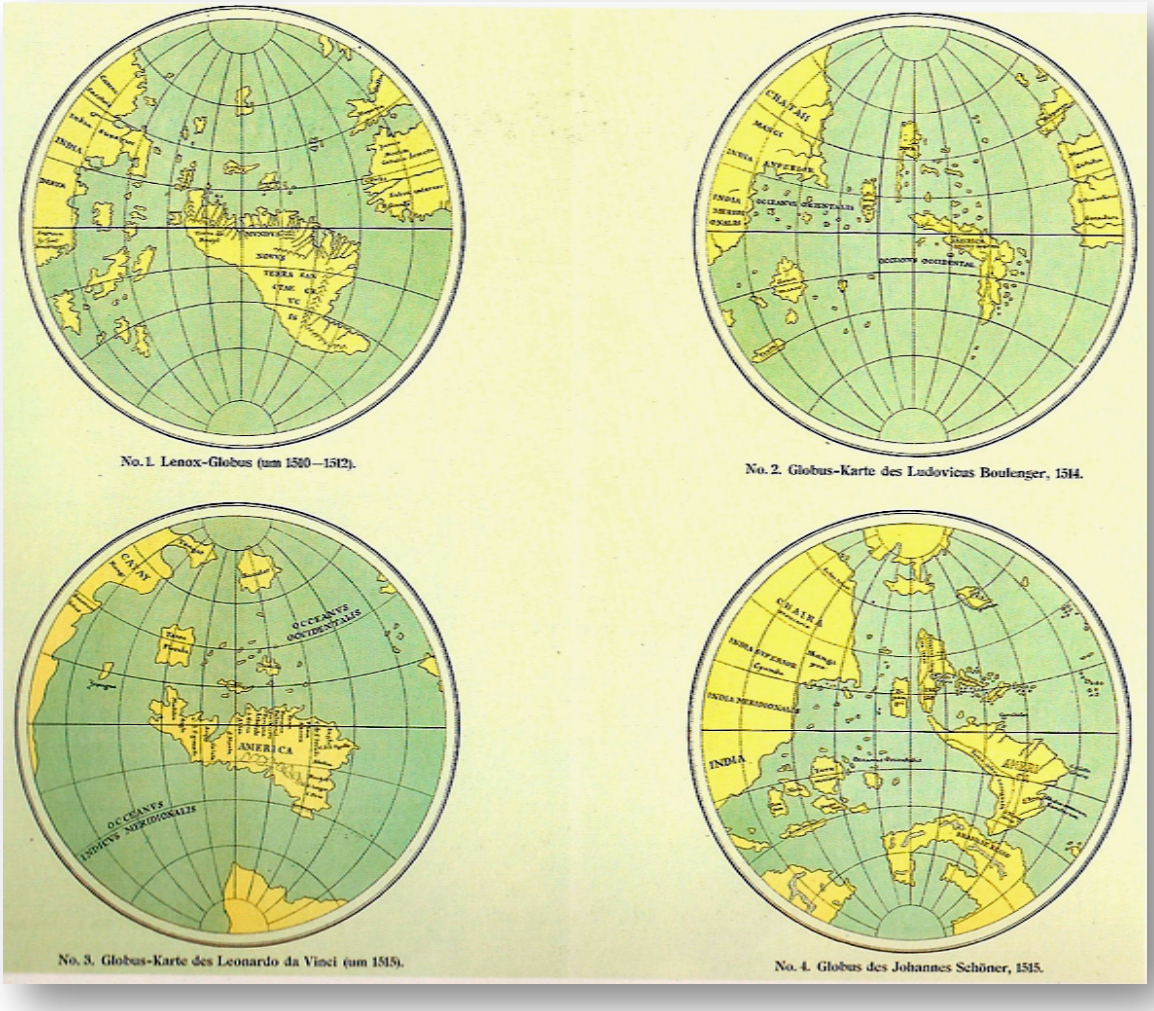
Reconstruction by Vladimir Zakharov, historian, Ufa, Russia



No. 1. Lenox-Globus (um 1500—1512).

No. 2. Globus-Karte des Ludovicus Boulenger, 1514.

No. 3. Globus-Karte des Leonardo da Vinci (um 1515).

No. 4. Globus des Johannes Schöner, 1515.