

HISTORY OF CARTOGRAPHY

Albanito Roxana Patricia
Aquino Marcela Silvana
Gaubeca Susana Elena
Mola Paula Alejandra
Av. Militar 3987 Ciudadela (1702). Provincia de Buenos Aires. Argentina.
Tel: 54 1 9824377.
Fax: 00541 9017710.

The first cartographical revolution begun when Columbus reach to America. Since then cartography was updated, but to say the truth, before Columbus's arrival had already existed maps recording the american continent, some of them with many details. This could be seen for example in Ptolomeo of Hammer and in the globe of Martin Behaim.

There are many theories about the arrival of diferents etnical groups to America. The existance of maps before Columbus. could mean expeditions of both discovery and exploration within the continent with enough details.

Old civilizations knew America

It is affirmed that bofore Columbus's arrival to the West Indies the europeans already knew maps of american lands. Those maps, that would seem to represent our continent, come from legendary voyage, hypothesis and mythical belief.

Columbus would have had predecessors of all kinds and colours. But what is true in all this? Before Columbus's expeditions, Were men of the old continent come to our continent?

There are Columbus's predessesors of all kinds: truthful, unreal, imaginary, posible and legendary. There are predessesors of all colours and even in a brief is impossible to mention all of them. A way to begin, as good as any other, is mentioned the Northern civilizations which after all were the nearest civilizations.

It is well known that vikings were bold travellers and adventurer and they did not hesitate to reach every place at any cost, but they were not moved by curiosity. They found material benefit, practical and tangible. Discovery for discovering were not their interest.

This is the main diference between Columbus trip and the precedings trips that were done by another men, another countries and in another times: Colombus trip was moved by interest, and the others no.

From the begining the norwegian learned to be excelent navigators. Their old name were vikings, the word viking comes from vick, that is fiord, so vikings would mean "man of the fiords".

The audacious normam made a raid into hyperboreal seas. The Northern Roads discovery happened because of them.

When they begin to explore more and more the ocean, near of both the Northern Sea and the Sea of Norway they hadthe possibility of knowing islands. In this way they reached to Iceland in 861.

In those times life in Norway was dificult. As a consequence in 878 the norwegian Ingolf begun with the definitive settlement of Iceland.

A ship departed from Norway and did not find Iceland, but after 500 kilometers reached Greenland. Greenland was not explored till 986. The explorer was Erik, called the Red.

Since then, began a continuous exchange between Iceland and Greenland, so the colonization had begun.

In the early XI century, Leif was the most important of Erik's sons. Leif inherited from his father the nautical ability. And as he was an adventurer of seas, reached Bay of Baffin calling Helluland (Stone Land) the lands he sighted there. Coming to the South found other lands calling them Markland (Wooded Land) and Vinland (Land of Wine).

To some authors Helluland is now known as Peninsula of Labrador, to others authors Helluland is Newfoundland (Terranova); Markland could have been in Newfoundland or in New Scotland, and Vinland could have been New Scotland or Massachusetts.

All these events occurred in the year 1000 of our age: five centuries before Columbus's trip.

Navigation and cartography in centuries XIV and XV

In the XIV century begins to appear the first gleams that will end in a new age. The main actors were not yet the vikings, but other braves old salt coming from the south of the Iberian Peninsula, whom were conquering the Atlantic Ocean with ships more secure.

First of all were the basques, who were finding both whales and stockfish. With this purpose were coming more to the north and West.

In the year 1367 the geographer Picignano made a map including an island in the center of the Atlantic Ocean and calling the island Antilia. Since then the later maps of different cartographers included the island.

But, even more important is the inclusion of Stocafixa island in a map of the year 1436 done by cartographer Andres Bianco (in some texts called also Andrea Blanco). The word Stocafixa would come from the saxon word stockfish. This means that it would be a coast usually reached by fishermen both basques and english, letting us suppose that Stocafixa and Newfoundland are only one.

After, the portuguese came to the sea, but under the State's imperative of finding new lands.

The deal grew during the kingdom of Henry the Navigator, who established an important collection of maps; being many hours in front of portulanos that in many times showed some not accurate data. To improve these maps he spent lots of money.

In this way was how he joined a select group of cartographers and astronomers, and sailing with their ships, were recording in maps each of the regions explored. How did they translate those data into a map? Both genoeses and portugueses did not use the square system of latitude and length; this system was replaced for a trunk of league scale where the length were of 50 miles with ten subdivision of 5 miles each one and a rout net departing from different points called "Rose of Winds".

A curious data is that the trips of portugueses were recorded for the genoeses charts. It is said that the genoeses watched on the portugueses and took their discoveries to after represent them in their maps.

In 1478 was reached Cabo de Buena Esperanza, in South Africa and it was succeeded in turning it around, beginning the destruction of the ptolemaic system, and demonstrating that Africa were not joined to the

antartic continent. Afterwards the East Indies are reached and is discovered that from the east the Indic Ocean was closed so there was *not* a big lake as it had suposed.

In this way came out maps recording these new discoverings, but based always in Ptolomeo idea of putting in front of Europe the east coast of Asia.

Toscanelli (florentine cosmographer, 1398-1482) wrote a letter to the King of Portugal where he recomended to approach to both Asia and the East Indies coming from the west , not from the South.

In Murano, and as a request of the King of Portugal, is prepared a worldmap with a clear ptolomaic inspiration, but the portuguese discoveries were included.

In 1492 Martin Behaim (german geographer, 1459-1507) designed a gepgraphic globe that has all the discoveries before of Columbus's trip.

This was the existing cartography when Christopher Columbus had developed his idea of reach the East Indies coming from the west and departing from Europe.

But, was this only an idea of Colombus, or the Navigator had already crossed the Atlantic Ocean?

In 1476 was carried out an expedition lusitano-danish. The expedition was planed years ago by Henry the Navigator (son of Juan I of Portugal, 1394-1460). Henry got the idea of studing west lands that had been recorded in a map of 1427. The map was a present of his aunt Erik of Denmark.

Many theories were deduced from this expedition, one of them could be that Colombus himself would had navigated to America, but as he came back to his continent as a shipwrecked sailor he decided to kept his secret, his maps and all what he had learned, and devoted to both study and plann the big trip of the Conquest.

Many datas placed Columbus in America before 1492: the theory mencioned above, a translation of Columbus diary book made by Father Bartolome de las Casas says: "I departed in Febrary of 1477 ,Ultra Tile, island one hundred of leagues..." , considering with any doubt Tile or Tule as Iceland, Columbus would have been in front of America by 1477. There are also another document, a capitulation signed by the Catholics Kings on April 17th. of 1492, that says textually "... in some satisfaction of what he **has discovered** in the oceanic sea..." , and many others hypothesis that confirm Columbus staying in America before 1492.

The almirant knew that crossing the ocean he would find this lands, as he got with him maps confirming his idea.

Why then October 12th it is consider as the official date of the Discovery?

In this date is setted up a new universal order, new lands are recognised all over the world, a new road to conquest is opened, a new society and a new cultural situation is established.

Columbus comes back as a conquering and not as a shipwrecked sailor, he did not be a casual discoverer.

The large business did not conquest only the new continent, but also conquered the most important dream of any navigator.

Columbus died thinking he had reached to Asia, he never admitted the possibility of putting a name to the

lands because they were the West Indies and the Castilla government called them this way.

But, why does the later cartographic record the name of America in this lands?

Americo Vesputio (italian sailor and cosmographer, 1451-1512) from the begining knew that this lands were part of a new continent and he proposed to call this lands New World, but he never suggested that this lands were called with a derivation of his name.

What really happened is that a group of priest of the church of Saint Die in the dukeland of Lorraine (France) made up the Gimnasio de los Vosgos, to study cosmography based on the Ptolomeo geography. This group grew enthusiastic with the maps describing Vesputio's trips and they thought wrongly that Vesputio had discovered the new lands, so they decided to call those lands America in Vesputio's honour. They made a large wall map and an earth globe in 1507 where America could be read.

The idea of the Saint Die group of priest was spread to the scientist circles in Europe devoted to geographical and cosmographical studies.

One of the members of this group was the german Martin Waldseemuller (1470-1520) who drew the wall map and the globe mentioned above. Also he made a map that has been reproduced many times but with the wrong idea of believing that Americo Vesputio had been the discoverer, and when Waldseemuller was aware of the mistake, he retracted erasing the name of America from the maps and setting in this place a board with the names of the discoverers in cronological order: Columbus, Pedro Alvarez Cabral, Vesputio.

This was in vain because after Waldseemuller's death the main european cartographers go on calling America to the new lands.

Southamerican Protocartography : Dragoomtail

From long time ago are known maps and globes of the centuries XV an XVI where South America appears joined to China. As a tradition China is represented by its milenary emblem, the Dragoom. So in this way the large peninsula that is South America is the Dragoomtail, and it was considered only as a cartographical mistake.

Professor Paul Gallez, a belgium-argentine investigator studied seriously those representations and he could identified them in many precolombian maps, showing that an old American discovery from Asia is reflected in the oriental and european cartography.

We will identify and analyse the first cartographical manifestations of South America included in Martin Behaim and Hammer's maps.

We are placed in the period before to Columbus trip, so before the oficial discovery of America.

The earth globe of Martin Behaim was made during the first Columbus's trip and before of knowing its results.

At present this globe is one of the oldest and better mantained since our days, although the changes it has suffered with time and unfortunately not always those changes were good, so it has lost many details of the original.

The Dragoomtail in this globe is very much alike to the universal map of Waldseemüller, who was inspired

in Behaim, at least in which is referred to the continent shape.

The inside of the Dragoomtail in Behaim's sphere, the hydrographical net, and the inscriptions were changed many times, but fortunately they have been maintained undamaged in other spheres and in plain drawings.

One of the most marvelous reproductions is the collection of 92 photographs covering the present globe. The photographs reproduced in a Berliner magazine. This reproduction shows all Martin Behaim's sphere, also called Nürnberg, covered with old inscriptions.

From XVI century to XX century people changed the sphere, putting on it their personal concepts about Dragoomtail's hydrography, but they never suspect that it was South America.

Now we will analyse an example that shows why it is true that the Dragoomtail is South America.

In different photographs of the magazine mentioned above, Tierra del Fuego (Argentina) it is called as COYL, COILUR, CALMIA.

By a side there is an inscription in which only three lines are legible.

IN DEISER INSEL COYLUR
IST SCT TOHMAS DER ZW...
VOL GERMARTERT WORDEN

If we analyse this paragraph we have that INSEL means island. It is striking because in those times was an evident peninsula and not an island. This concept has been confirmed afterwards with the existence of the Straits of Magallanes.

COYLUR is referred to Tierra del Fuego. In the second line we have that TOHMAS is THOMAS. This kind of mistakes were ordinary on those days. ZW is illegible and VOL - VOLL - means completely, plenty. So the paragraph would be translated as:

IN THIS ISLAND OF COYLUR
SAINT THOMAS THE ...
HAS BEEN COMPLETELY MARTYRIZED (TO DEATH)

About the word ZW there are two theories. It could mean ZWILLING, that is twins, because Saint Thomas was called Didymo and in German is Zwilling. But most probably is that it could mean SWELFBOT, the apostle.

What was doing Saint Thomas in Tierra del Fuego?

It could have been an attachment of another time, but it is not. COILUR was also mentioned in the maps of Hammer and Waldseemüller, so its authenticity is true, since it was in the mentality of that time.

So Saint Thomas would have been in Tierra del Fuego.

If we look at a map of the Dragoomtail we will see that the Indies and Tierra del Fuego are similar, so that they could come to confusion.

In the Dragoomtail, that is South America, were placed geographical characteristics of the Indies.

There were two Indies, the Stricto Sensu which is at present Hindustan, and the Lato Sensu which would include South America.

When the island of Ceilan (Scri Lanka) was discovered at the south of the East Indies, medievals cartographers did not hesitate in drawing it not at the South of Stricto Sensu, but at the South of Lato Sensu; that means at the south of the Dragoomtail, so in the Argentine Patagonia.

The same happened with the Island of Java, at the southeast of the Indies, they placed it in the Atlantic.

Saint Thomas would not have died at the south of the East Indies as it is known, but he would have died in South America.

Because of this mistake we could affirm the following: If the island of Ceilan, Java and Coilur (the Indies) were placed in South America it is because South America was in the maps.

Another proof of that the Argentine Patagonia was known is that in Behaim globe were mentioned the Tehuelches Indians, also known as Patagones.

The Ptolomeo of Hammer (1489) is the best map of South America drawn before Columbus's first trip, and this map is the cartographical representation more completely and more exact of the hydrographical net of South America till the first half of XIX century.

As the maps of the Portuguese of XV century have disappeared, the maps of Hammer are the oldest evidence about the trips of both Diego Cao (1485-1487) and Bartolome Diaz (1485-1488), year of the trip.

Hammer changed Ptolomeo map of Asia based on the Portuguese reporter about the Indian Ocean and the description of Marco Polo and Conti about the east extreme.

He followed the opinions of Toscanelli about the total length of Euroasia and the length of the Gloomy Sea, that is the Atlantic Ocean.

The influence of Hammer is seen in the cosmographical ideas of Columbus, Vesputio, Gaboto (1476-1557) and Magallanes (Portuguese navigator, 1480?-1521).

At present are known four Ptolomeos of Hammer dated around of 1489.

The shape and geographical position of South America are exactly the same in the four Ptolomeos, but the inside of the continent is where they do not are similar.

We have the Ptolomeo of London, the Hammer at the Museum of Britain which is very important for the history of pre Columbus cartography in South America and where are drawn all its rivers. The Ptolomeo of Leiden has been very damaged and the fluvial net of the Dragoomtail is not clear. Finally, the Hammer Ptolomeo of Yale is the oldest map known with cord-shape projection, also used afterwards by Waldseemuller. Regarding South America, the Hammer of Yale is similar to the others only in shape and position of the continent, but the island around are different. Also in the Hammer of London are many details of the Atlantic coast that do not appear in the Hammer of Yale.

Waldseemuller and Behaim have done good in copying Hammer, but they should have taken into account the London one or the Leiden one, not the Yale Ptolomeo because it is the one least similar to reality.

Comparing both the London Ptolemy of Hammer and an updated map the hydrography and orography are similar: Orinoco River, the Guayanas Massif, the Amazonas River, San Francisco River, Serra do Mar, Parana River, and Paraguay River. More in the South Colorado River, Negro River, Valdes Peninsula, and River Grande of Tierra del Fuego.

The identification of all these large rivers of South America, mainly the Parana-Paraguay system, that make a unique diagram in the world because of their shape, orientation, size, and location from the coast, and that is enough to prove the South American identification with the Chinese Dragon-tail.

Cartography and proto-cartography are summed. Hypothesis, theories, and real things are mixed. Investigation, recopilation of information and personal conclusions allow us to accept many suppositions as true and in this way cross the frontiers of proto-cartography to reach the authentic cartographical history.