

# The Napoleon Series

## Maps and Mapmakers of the Napoleonic Wars: Spanish Cartography

By: [Richard Tennant](#)

**Tomás Mauricio Lopez de Vargas Machuca (1730-1802)** studied geography and cartography with Jean-Baptiste Bourguignon D'anville from 1752 to 1760 in Paris (refer to *French Cartography*). He then became the official geographer of the Kingdom of Spain. He produced a large series of maps from different regions of the world while emphasizing the mapping of his homeland, Spain. Towards the end of the 18th century, the King of Spain asked Don Tomás López to realize a large survey among all municipalities in the Kingdom in order to overcome the lack of mapping of the Kingdom. He addressed a letter to all the Spanish priests, asking them to draw a map of their parish, within a radius of approximately fifteen kilometres around their bell tower. The majority of these men of the church, having received no cartographic education, merely described their literal territory. However, five hundred of them met the demand and send an extraordinary amount of doodles, drawings or perspective kinds of intuitive maps as possible ways to represent the territory.

Don Tomás López spent his life trying to gather these disparate sources into one document of maps and died exhausted in 1802.<sup>1</sup>

C. San-Antonio-Gómez & C. Velilla, 'Universidad Politécnica de Madrid-UPM and F. Manzano-Agugliaro, Universidad de Almena, wrote a paper on Tomas Lopez. The following is extracted from it.<sup>2</sup>

### Tomás Lopez's Geographic Atlas of Spain in the Peninsular War

*During the Peninsular War, Napoleon's and Wellington's armies were aware of the lack of precision in the maps of Spain and its provinces that appeared in Tomás Lopez's Geographical Atlas of Spain. The errors were due to the non-topographical surveying method he used which he had learned from his teacher Jean Baptiste Bourguignon D 'Anville. To map all of the Spanish provinces, Tomás Lopez divided them into circles of three leagues in diameter (16,718 m), taking a particular town as the centre. He asked the town's priest to draw a map of the territory and to complete a questionnaire that Tomás Lopez sent to him. The priest was to return the two documents after he had completed them. Subsequently, at his desk, Tomás Lopez used the maps and reports as well as other graphic and written sources from various locations to make an outline of each map. Next, he made a mosaic that served as a pattern for drawing the final provincial map.*

Due to the lack of funding, personnel, and the technical means to carry out the surveys, cartographers sought the assistance of monks, priests, soldiers and tax collectors with sufficient graphic knowledge to draw a map intuitively. In Spain, such surveys were widespread and led to "Desk Cartography" made by expert cartographers. They were based on very unreliable fieldwork carried out by village priests, so the maps are not very precise.

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<sup>1</sup> [Tomás Lopez](#)

<sup>2</sup> [http://oa.upm.es/14061/2/INVE MEM 2011 120868.pdf](http://oa.upm.es/14061/2/INVE_MEM_2011_120868.pdf)

In Spain, the promoter of such methods was Tomas Lopez (1730-1802), who was a student of Jean Baptiste Bourguignon d'Anville (1697-1782), one of the 18th century's most prestigious cartographers. In part, D'Anville applied the method of Francois Chevalier, whose student he was and which is considered to be the best example of Desk Cartography. Tomas Lopez studied the Desk Cartography during his nine years stay in Paris.

Nonetheless, the methods used by Chevalier and Lopez have one thing common that the field work used to draw the maps was carried out by village priests who followed their instructions. Chevalier's method was ingenious and more rigor because it gave precise indications on how to position a map, set distances and define the symbols for graphic representation. On the contrary, Lopez left such issues to the village priests' discretion. He was more concerned with making an inventory of the location by sending out a questionnaire called *Interrogatorio* which the priests were to complete and return to him, together with the map they had drawn. Originally, the method was designed for making the *Diccionario Geografico-Historico de España* (Geographical and Historical Dictionary of Spain), an unfinished project promoted by the Spanish Royal Academy of History in 1776. That was why he asked the village priests for a map of the location and complete information on statistics and geography of the region. Tomás López used all of the material which he gathered to prepare the *Atlas Geográfico de España* (Geographical Atlas of Spain), a posthumous work was published by his sons in 1804.

### **Maps of Spain at the Beginning of the Peninsular War**

Maps of Spain at the beginning of the Peninsular War were few and unreliable. Therefore, Napoleon arranged that, given:

*"the lack of topographic material on Spain, it is an important duty of the geographical engineers at the Army's Topographic Office (French, in Spain), to collect with all due diligence and utmost care anything that may exist in public depots, in the War Depot and the Navy Depot in Madrid, the files of scientific societies, provincial universities, and the church. Equal attention is to be paid to collecting astronomic and trigonometric results... "*

All the above material was to be collected at the Spanish Army's Topography Office, which was created in Bayonne on 27 February 1808. The following year, on 30 November 1809, Jose Bonaparte created a General Depot for Geographical Charts of Plans and Topographical Sketches. The best-known maps of Spain were the ones which were engraved in the 18<sup>th</sup> Century, such as the one published in Paris: *Hispania* (1725), by Guill de L'Isle, included in the *Atlas Novus*. Some of the maps engraved in London were: *A map of the Kingdoms of Spain and Portugal* (1745) by Tendal, engraved by R. W. Seale; and *A map of the Kingdoms of Spain & Portugal* (1794), by Sculp. T. Conder, published by R. Wilkinson. Among the maps published in Spain, we can refer the *Mapa de las carreteras de postas de España* (1760) by Ricardo Vail and the one made by Jesuits Martinez and de la Vega (1739-1743). They are all general maps of Spain and, therefore, they are not very precise.

When the war commenced, the most current maps of Spain were the ones in the above-mentioned *Atlas Geográfico de España* by Tomas Lopez, which was published by his sons in 1804, shortly before Napoleon invaded Spain. The map was reprinted in 1810, during the war. The *Atlas* contained 38 maps divided into 102

pages and with different scales for each map, which varied between 1:140,000 and 1:640,000.

The cartography made by the French army includes a *Mapa de España y Portugal* (Map of Spain and Portugal), at a 1:500,000 scale, comprising 12 large sheets, which were made for Napoleon. It was begun in July 1808 and was drawn in six weeks. The basic information was obtained from Tomas Lopez's maps and Tofiño's charts, to which communications based on the 1785 Mentelle map, were added and which appeared in *l'Etat des Postes de Bourgoin*. Many topographical surveys of itineraries, areas of military importance and garrisons were made.

### **The Cartographic Method Used by Tomas Lopez: the Questionnaire**

The questionnaire consisted of collecting and ordering pre-extant information and information gathered for the occasion, to be used to make maps.

Lopez achieved valuable work, particularly in the perfection of engravings and the printed quality of maps, as in case of the *Atlas Geográfico de España*, the first comprehensive and detailed map of Spain. Although he never did any fieldwork, Lopez was aware of the latest advances in scientific cartography and acknowledged that: *the best way to make a map is by walking and measuring the land, but such method is not possible for a private individual*. In other words, for a mere geographer such as himself, who had neither the equipment, nor the material or the personnel that such a method required. In his work *Principios geográficos aplicados al uso de los mapas* (Geographical Principles Applied to the Usage of Maps), published in 1775, Lopez explains how he did cartography:

*"A geographer works at home, with several documents of a single piece of land laid out before him, which he compares and adapts as he considers best. It is not for him to do surveying, for others do that sort of work... If geographers needed to see and measure the land represented on their maps, not one of them would have been able to publish even one of the four parts of the Earth during his lifetime; and yet that is what they do"*

Towards 1766, in view of the difficulties he encountered in making maps of Spain's provinces, Tomas Lopez, authorised by the appropriate minister, officially addressed a 15 items questionnaire, or "*Interrogatorio*" to bishops, village priests and civil servants, asking them for data on their dioceses and parishes.

### **The Method Used for the *Interrogatorio***

In the *Interrogatorio* was recommended that the priest should take their village or town as the centre of a circle with a radius of three leagues, to focus on the land within that circle. The information requested was mainly statistical, i.e.: the name of the hamlets, villages and towns and the distance between them in Spanish leagues, with an indication of their orientation; the name of the rivers, brooks and lagoons, and their bridges; the names of mountain ranges and the name of their passes and woods. Tomas Lopez also requested a small map of the territory within a three league radius, which was to include all the above information. Tomas Lopez told the priests that although:

*"it was not done like a professor would do it, we shall be content with a mere idea or sketch of the land, for we shall fix it by giving it a finishing touch. We*

*are aware that many of you are amateur geographers and each one of you is very capable of showing us what lies within your villages and in the surrounding area."*

Some of the maps which were sent are very beautiful in content, whereas others are unintelligible. Soon, Tomas Lopez began to receive the responses to the *Interrogatorio*. He verified that they had been completed and then filed them. The *Interrogatorio* contained two types of information: one on statistics, and the other on the geographic data provided by some of the questions and, above all, by the maps sent by the parish priests.

The geographic information was used to make the maps that were published annually and that were collected to make the *Atlas Geográfico de España*. Tomas Lopez used the diagrams of the regions that made up each province and previous maps from several different locations. He performed very detailed desk work, and then fitted everything together conveniently and carefully to make a draft copy or basic document with which to engrave a copper plate that would then be used to reproduce a provincial map. This was an arduous task that not always obtained results because, as Vayssiére said: "*he died, exhausted, in 1802, after trying in vain to coordinate hundreds of maps that were inconsistent with each other*"

Lopez found the *Interrogatorio* was very useful, since it provided him with sketches that he could use to draw many locations at the right places, according to their relative situation, which had not been mapped before. However, none of the data was of scientific value because the authors lacked the appropriate learning.

Don Tomás López however, was not just producing maps of Spain, but of the whole Iberian Peninsula. Whilst he could apply this approach in Spain, we would not have been able or allowed to contact the priests in Portugal. Obviously this made the content of these maps to be extremely dubious in many aspects.

### **Massena's route from Almeida to Vizeu in 1810**

Oman states 'It must first be remembered that his maps were abominable: the actual case of plans used by the staff of the Army of Portugal is preserved in the Library of Queen's College, Belfast. It is issued by Lopez in 1778, which in the remoter parts of Portugal not only offers a mere travesty of the natural features, but actually marks as existing roads that never had been made, and omits others that were actually available. It shows, moreover, no distinction between chaussées, country roads, and mere mule tracts. Places of considerable importance are misplaced by several miles, eg Almeida is placed on the Coa instead of two miles from it : Vizeu is much too far north, as is also Bussaco. As far as this map goes, the physical difficulties in the way of an advance north of the Mondego look no greater than those on the southern bank.'

Fortescue concurs 'I have seen the actual maps used by Massena, and can vouch for all the defects which Mr Oman describes in them. I have tried to use them in writing this history in all parts of the Peninsula, and have found them nowhere to be trusted.

Placed on the Napoleon Series: January 2020