

Colonial Urban Planning and Land Structures in the Philippines, 1521-1898

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Abstract

The Spanish Colonial period in the Indies extends from 1492 to 1898, when the last colonies - Cuba, Puerto Rico and the Philippines - attained their independence. The Philippines depended on the Spanish Crown from 1521, the date of the first settlement on the Island of Cebu. More than two hundred new cities were founded along the archipelago with the traditional grid structure, but some with other urban typologies have not been studied before. At the beginning they were mostly located on the coast and later became port cities, but the ensuing exploration of inland territories led to the construction of new settlements, later linked through a network of roads, railroads and navigational routes. Based upon the ancient cartography of the Philippines that the authors have recently discovered in the principal Spanish repositories, the present article studies these unexplored and unpublished fields of research, analyzing the different urban patterns, as well as the territorial structures that were consolidated during the Spanish Colonial period in the Archipelago.

Keywords: Spanish colonies; urban typology; land planning; Philippine Islands; ancient cartography

1. Introduction

The activities led by the Spanish Crown on the Philippine Archipelago lasted almost four centuries. They began in 1521, when the expedition of Magallanes and Elcano sighted for the first time the coasts of Cebu Island, and invited the Rajah to submit to the King of Spain. Later explorers in 1527 and 1529 reconnoitred the Islands of Samar, Leyte, Cebu, Mactan and the north coast of Mindanao. They developed the first maritime routes between the islands, the first commercial relationships with China (Walker 1979; Falcón 1989), and even the *tornaviaje* (the maritime return route) to Acapulco in Mexico across the Pacific Ocean (Schurz 1939).

1565 was the year of an outstanding expedition: López de Legazpi founded the first settlement in the Philippine Archipelago -San Miguel-, located on the east coast of Cebu. About two hundred new villages and *presidios* (fortresses) followed, spread over the islands, and mainly at the coast: the most important was Manila (1571), founded over an existing native commercial settlement.

One important point to consider about the Spanish colonial period in the Philippine Archipelago is that

it has been studied mainly from two points of view, both the historical and the architectural¹. Whereas the perspectives of urban planning and land structures in the Philippines have been usually forgotten or scarcely mentioned in the researches, the main focus has been on the American cities (García Bellido *et al.* 1968; Chueca and Torres Balbás 1981). Only the town of Manila and the neighbouring port of Cavite aroused the interest of researchers².

This is an important drawback, as the lack of specialized studies led to the wrong supposition that the only pattern applied to the new settlements was the regular grid. The authors' research³ evidences new and more complex urban typologies.

A further concern is that the relationships established between places and sites wove a set of complex territorial sub-systems which also involved the maritime sphere. The authors' study will allow for the understanding of the historical structures and dynamics of individual regional systems which still survive and which can still be recovered as part of the cultural memory.

Both targets will contribute to spreading the cultural heritage of the Philippines.

2. Methodology

1/ Sources: The research is based on the discovery of a large collection of unpublished ancient cartography of the Philippine Islands, kept in the main Spanish archives and repositories⁴. This collection includes manuscripts and printed maps (Fig.1.), nautical charts

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(Fig.2.), urban and architectural plans, old pictures and views (Figs.4. and 13.), as well as photographs. They were made both by Spanish and foreign cartographers who worked for the Spanish Crown from the mid-sixteenth century to the end of the 19th century.

2/ Design and construction of digital cartographic databases of the Spanish ancient cartography of the Philippines, accessible online by Internet (Fig.3.), which include: a/ alphanumeric data related to the catalogue number, history, cartographic techniques, descriptions, references, accuracy, etc; b/ a high resolution image of each map with its related metadata (Chías and Abad 2010).

This collection of recently discovered maps completes other previous cartographic compilations

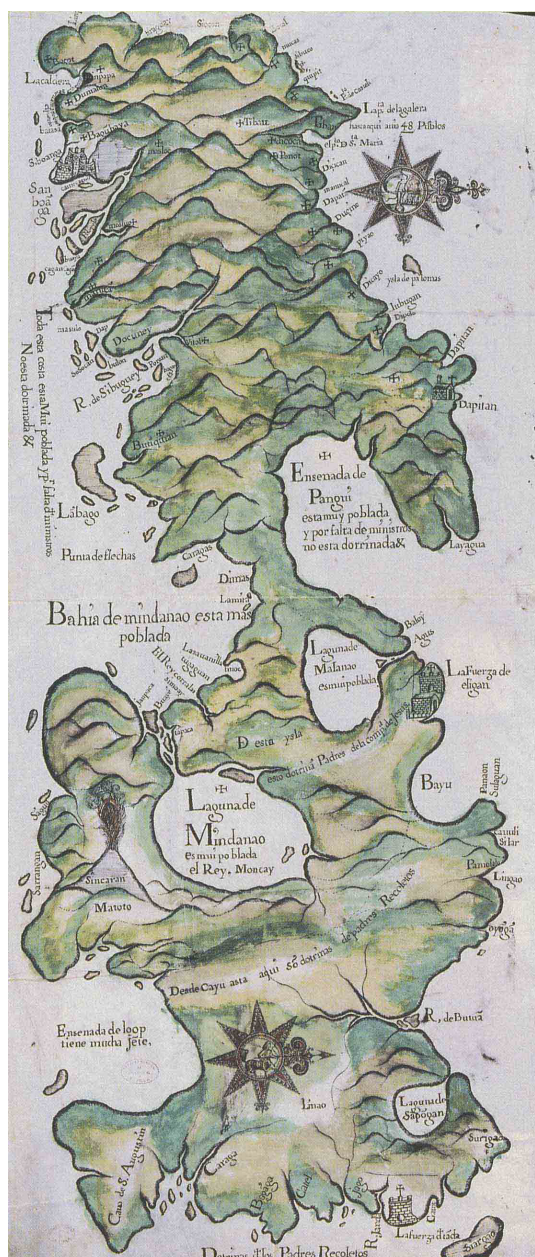


Fig.1. Manuscript Jesuit Map of the Settlements and Fortresses of the Island of Mindanao, 1683. Archivo General de Indias, Seville, Spain

which were limited or focussed on printed maps (Pardo de Tavera 1910; Vindel 1991; Quirino 1963).

3/ A comparative analysis of the different maps and images, aiming: a/ to define and classify the different urban types, considering the Spanish legislation and its influence on the main Spanish foundations

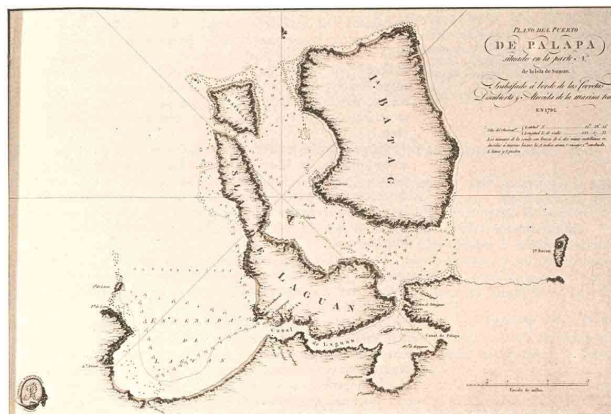


Fig.2. Malaspina Expedition, Printed Chart of Palapa Inlet, Samar Island, 1792. Museo Naval, Madrid (Spain)

Universidad de Alcalá ANCIEN SPANISH CARTOGRAPHY e-LIBRARY

Id	3	Library	ICC	Signature	RM. 23984
Subject	Toledo; Guipúzcoa; Cádiz, bahía			Date	1584 ,s. XVI
Title	"Carpetaniae partis descr. 1584; Vadursorum, sive Guipvscoae regionis typvs; Sinus Gaditanus, nunc baia de Cadiz / hanc insulam perlustrabat, et sua manu depingebat [...]"			Kind of Document	Topographical map
Author	Georg Hoefnagel, Abraham Ortelius			Size	430 x 550 mm; 1 sheet
Scale	Toledo 1:250.000 / Guipúzcoa 1:300.000 / Cádiz 1:100.000. Graphic scales in miles				
Map projection	Plans. Without graticule. North at the upper side of the sheet.				
Technique	Copper engraving. Hand coloured with aquarell. Support: print paper.				
Description	Three maps: at the upper side, left Toledo (inside an 170 x 240 mm rectangle), right Guipúzcoa (inside an 170 x 230 mm rectangle); at the lower part Cádiz, inside a semicircle of a 470 mm diameter, that partially invades the other maps. Dutch and latin text. Decoration: two medals with an archer and a ship; titles in three cornucopias.				
Short history	Included in the "Theatrum Orbis Terrarum", printed by Ortelius in 1598 in Antwerpen. The first edition was the 22 May 1570, dedicated to King Philip II of Spain, and engraved by Hans Hogenberg. Other editions: 1577, 1578, 1579, 1606, 1612, 1624.				
References	Martín López 2002 / van den Krogt 2007 / van der Heijden 1995 / IGN 2000 / La imagen 1992 / Woodward 1987 /				

Image



Other remarks "[...] Georgius Hoefnagius Antverpian." Ther is another copy in the same ICC Archive (RM. 6777) of the 1606 edition, not coloured.

File creation 9/09/2008 **Operator** Chías **Link** <http://cartoteca.digita.ica.es/>

Fig.3. The Ancient Spanish Cartography e-Library Project. A Query to Databases

between 1521 and 1898; b/ to find the patterns of urban developments according to the character of each city –related to its commercial and military activities-, and also depending on its social, political, cultural and geographical conditions; this analysis includes a comparison of the dimensions of the blocks as well as of the main urban composition and structures; c/ to define the successive levels reached by the relationships that were established between the settlements and the territorial sub-systems.

4/ Conclusions can be directly drawn to explain the current situation of the above-defined urban and territorial structures, helping to take further decisions on urban planning actions even in the event they have disappeared, and those conclusions will permit them to be included in the historical memory as a part of the cultural heritage of the Philippines.

3. Definition and Classification of the Main Urban Types

The oldest colonial settlements on the Philippine Archipelago were isolated forts and villages, surrounded by hostile Muslim territories and located at the coast. All of them were designed according to the provisions of the *Leyes de Indias* (Indies Legislation)⁵, enacted in 1573 by King Philip II of Spain. The repercussions of these laws on the new Philippine foundations had not then been studied.



Fig.4. Fernando Brambila, San Francisco Square in Manila, 1789. Museo Naval, Madrid (Spain).

As a short résumé, their main guidelines were: 1/ to find the most appropriate place to develop their main activities in safe harbours on inlets, bays, and river banks; as headlands to control the territories or the farming settlements in fertile plains; it was also necessary to provide the easiest terrestrial and maritime connections to other settlements; 2/ to choose the most healthy places; 3/ to apply the regular grid as an easy suitable way of defining the new urban structures, easily separating the Spanish from the native quarters; 4/ cities should have at least ten residents, preferably farmers and cattle-raisers, to whom a block in the

city and four leagues of land was given, as well as other privileges; 5/ building and public space design should be admired by the natives, as urban design and architecture played an essential role in the political propaganda and image of the Spanish Empire (Figs.4. and 5.); 6/ to prevent damage to native settlements and their rights.



Fig.5. Colonial Street in Vigan

1 Manila	5 Dagupan	9 Sorsogon	13 Iligan	17 Jolo
2 Cavite	6 Tarlac	10 Palapag	14 Panguil	
3 Cagayan Valley	7 Subic	11 Cebu	15 Zamboanga	
4 Vigan	8 Batangas	12 Tandag	16 Cotabato	

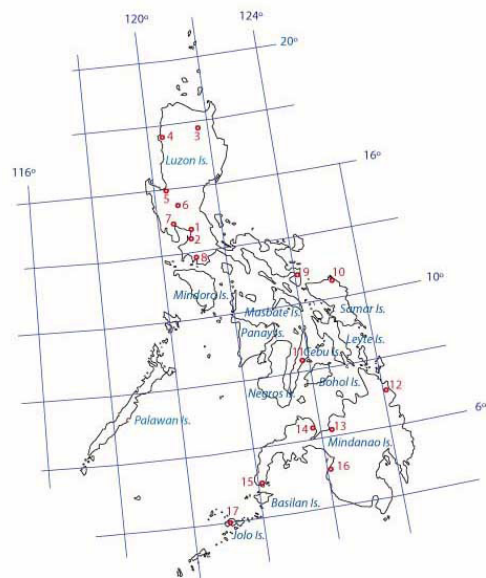


Fig.6. Main Spanish Foundations in the Philippine Archipelago, Cited in the Text

According to the information provided by the cartographic databases, and the effects of the Spanish laws on the Philippine territories, the authors classified the cities (Fig.6.) as follows.

1/ According to their function:

1.1/ port cities, mainly engaged in long distance foreign trade with other Asian ports (Canton, Macao, Malaka) and American ports (Acapulco); examples: Manila, Cavite (Luzon Island);

1.2/ military port cities, essential to maintain Spanish sea power; for example, Jolo (Jolo Island), Zamboanga, Iligan and Tandag (Mindanao Island) (see Fig.1.);

1.3/ secondary ports and anchorages which were

important ports of call for local trade lines, and natural harbours in stormy weather; for example, Sorsogon, Cebu (Cebu Island), Samar (Samar Island);

1.4/ forts on headlands; for example, Pollok (Mindanao), Isabela (Basilan Island);

1.5/ inner plots and cities which consolidate the terrestrial routes and defences, as well as some strategic exploitations such as wood for shipyards and tobacco plantations; examples are Amadeo (Mindanao), Vigan, Balabac, and the settlements in Cagayan Valley (Luzon);

1.6/ cities at riversides, for example Cotabato (rio Grande de Mindanao).

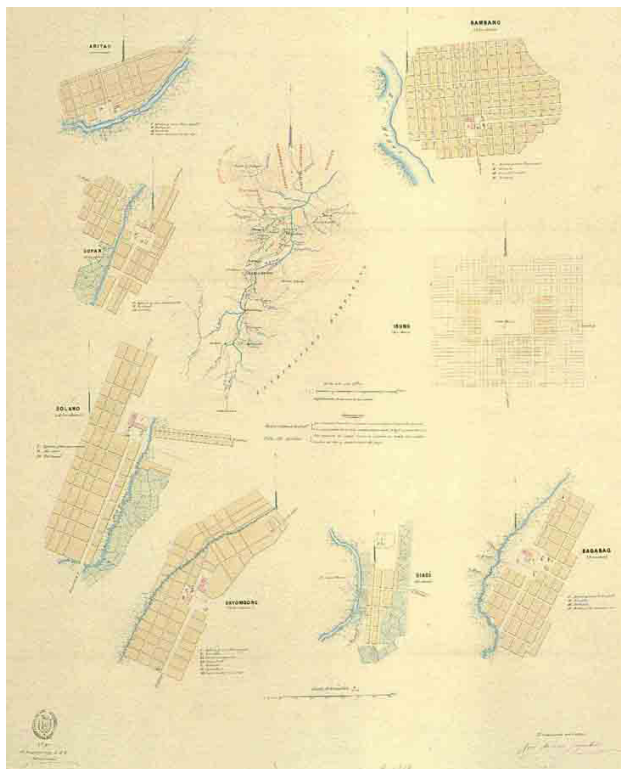


Fig.7. Cities of Luzon Island designed as Regular Grids (Ibung, Banbang, Bagabag, Diadi, Solano), and the Distortions Introduced by the Geographical Factors (Aritao, Dupax, Bayombong)

2/ According to the urban type:

2.1/ regular grid cities, usually composed of rectangular blocks, facing two sets of orthogonal streets; that constitute the main typology of the Spanish colonial foundations both in the American and the Philippine territories; main buildings facing the Plaza Mayor (main square), extending over an area of at least one block, and where outstanding urban events took place; secondary squares strategically placed for other urban uses such as port or trading activities, and they also occupied a block or a part of it; the most relevant example still extant of this typology is the city of Vigan (Luzon);

2.2/ cities with a distorted grid, mainly due to geographical conditions, such as rivers and hills that determined the urban borders and still control the

urban sprawl; floods and earthquakes are common phenomena in this area, and they historically conditioned the urban development as well as the height of the housing and the main buildings, and even of the bell towers. But distortions in the grid were also due to later urban developments: they frequently absorbed the neighbouring native settlements and suburbs into the new urban structure (Fig.7.; see also the urban growth of Manila in Fig.10.);

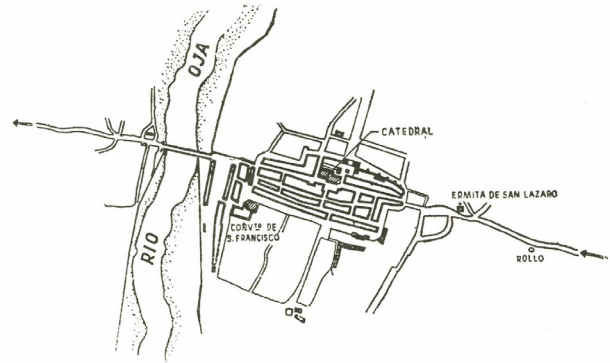


Fig.8. The Medieval Tradition of the Itinerary Cities: Urban Plan of Santo Domingo de la Calzada, Logroño (Spain) in the 18th Century; Total Length: 650 m; at Both Sides of the Main Street there were Four Sets of Rectangular Blocks, Each One 70 m Long and 35 m in Depth, with Back Lots; in the Town Centre there was a Wide Main Square (Plaza Mayor), the Heart of Social and commercial Life (Source: García Bellido *et al.* 1968, 108)

2.3/ cities placed along an itinerary (linear cities): this is an old European urban typology that the authors noticed for the first time in the Philippines; this typology formerly appeared along commercial or pilgrimage routes in the Middle Ages, such as the Road to Santiago of Compostela (*Chemin de Saint Jacques*) (Fig.8.); its blocks were arranged along the main road –also the main street-, and facing it; two secondary streets ran parallel and were symmetrically arranged at both sides of the main street. In the Philippines, linear cities were about 250 m in length, and each square was about 45 m long and 20 in depth, having back lots and a regular shaped plot of land outside the town –remember the Indies Instructions. These dimensions clearly follow the same proportions as those of the European linear towns, although on a reduced scale. They also had two secondary parallel streets and wide market squares inside the urban frame, where the main buildings were placed; and in the most populated ones, sometimes there were two squares that communicated across the main street. Examples are Calocan, Marilao, Sinit, and Bamban (Luzon) (Figs.9. and 10.).

2.4/ irregularly shaped cities: that is the usual plan for native settlements, as well as for spontaneous suburban developments. Main examples are the old suburbs of Manila previous to urban reforms in the 18th century, where native (*sangleyes*) or foreign traders (mainly Chinese and Malaysian) settled before the arrival of the Spanish conquerors (Fig.11.); another



Fig.9. The Linear City of Marilao (Luzon Island)

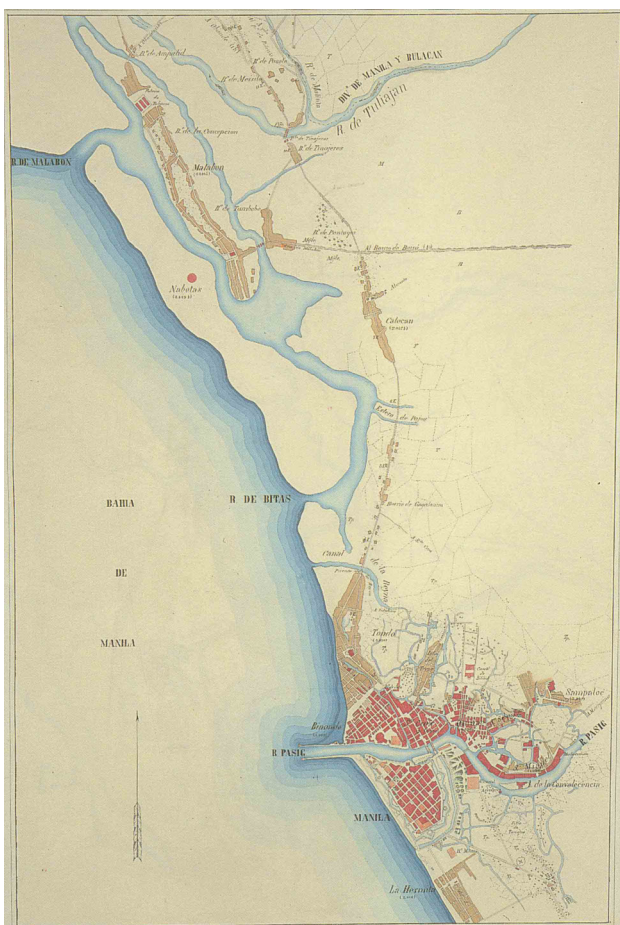


Fig.10. Juan Álvarez and Emilo Godinez, Itinerario de Manila a Tarlac, 1871. Centro Geográfico y Cartográfico del Ejército, Madrid (Spain). Calocan and Other Itinerary Linear Cities Placed along a Main Road to the North of Manila (Luzon Island)

example is the old town of Jolo (Jolo Island), whose wooden huts extended over a flat seashore.

2.5/ ideal plan towns: in the Philippines there are no examples of a purely ideal urban structure (such as radial or star-shaped), but it is quite frequent to find square grids inside more or less regular polygonal walls, according to the influences of the ideal town



Fig.11. View of Manila. Oil on a Wooden Chest Lid, c. 1645. Museo de Arte Jose Luis Bello, Puebla (México). This Naïve Picture Shows the Daily Life of the Town and its Suburbs, as well as the Irregular Arrangement of the Native Constructions

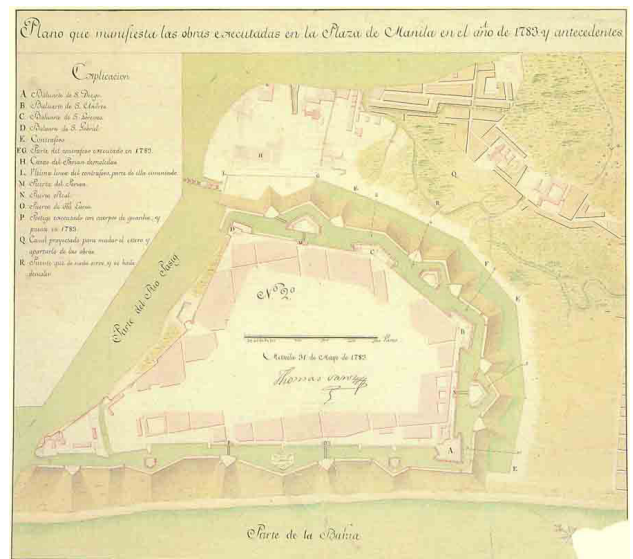


Fig.12. Thomas Sanz, Plano que manifiesta las obras executadas en la Plaza de Manila en el año 1783. Centro Geográfico y Cartográfico del Ejército, Madrid (Spain). Walls and Defences of Manila, Designed According to European Renaissance Treatises. Notice the Irregularly Shaped Surrounding Suburbs, Opposite the Secure Area Within The Walls

planning of Renaissance and French fortification treatises (Konvitz 1978). Examples are the inner city of Manila (*intramuros*) (Fig.12.) and Batangas.

4. Main Historical Land Structures

The first Spanish settlements were isolated and spread over the archipelago, strategically located on headlands, and they served both commercial and defensive purposes.

The first Spanish harbours were founded at casual anchorages where currents had taken the ships, or when there arose a need for shelter from storms. In spite of strong opposition from native inhabitants, the old harbours of Sorsogon and Cebu (Cebu Island), as well those of Palapag (Samar Island), Jolo, Leyte, Mactan, and Tandag, Iligan and Panguil on the north coast of Mindanao Island were conquered, extended and adapted to the new Spanish trading needs and strategies.

The indigenous maritime routes within the

Philippine harbours and the Chinese and Japanese ports were thus used by the Spanish sailors; they also took advantage of their commercial relationships with the kingdoms on the Far East Pacific coasts, as well as of their considerable knowledge of the sea and coastlines to find the best bays and inlets for the new harbours, and the best maritime passage ways within the islands.

Indigenous shipping, despite its millennial tradition, survived only on a small scale as the old main harbours and the maritime trade lines were soon absorbed by the European companies (mainly Spanish, but also British, French and from the Low Countries). Their supremacy increased during the two centuries of European expansion, imposing a new hierarchy in the Philippine ports closely related to the sea routes to Europe and the competition for East Indies goods. Spanish ships returned to Europe across the Pacific Ocean to Acapulco harbour in Mexico; then merchandise was shipped again in Veracruz to Spain via the Havanna harbour (instead of across the Indian Ocean and Cape L'Agulhas, as the Portuguese did).

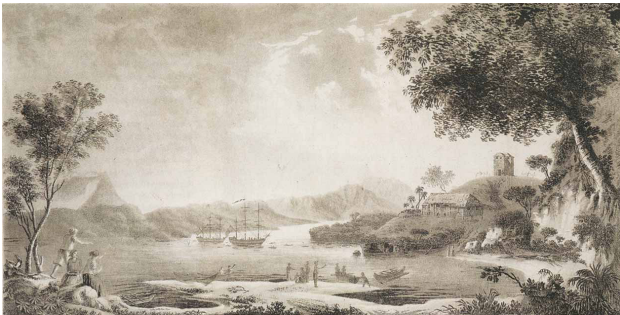


Fig.13. Fernando Brambila, View of Sorsogon Anchorage, 1789. Biblioteca Nacional de España, Madrid (Spain)

Port cities gradually conformed to a strategic network, where each piece was designed to play a specific role in the Spanish strategy of sea power. In this context the concepts of site and situation are crucial. Site responds to the suitability of individual locations to serve as ports based on topography and facilities; situation refers to their location in relation to centres of production and consumption, trade routes, and other ports and subjects of maritime interest such as naval bases (Broeze 1996, 100) (Fig.14.).

Following both concepts, on the islands that were scarcely inhabited or really hostile, isolated sites were founded at the main natural harbours (or at the few native ones), linked to the main maritime trading routes, but there was hardly any inland connection; the result was a fragmented colonisation and a lack of land routes (Mindanao and Jolo Islands).

Conversely the islands of Luzon (Fig.15.) and Samar (Fig.16.) were deeply explored and highly colonized.

The situation of the older towns along the main land routes depended formerly on the distances within staging posts –about two or three leagues–, and also on the topography and the understanding of the natural

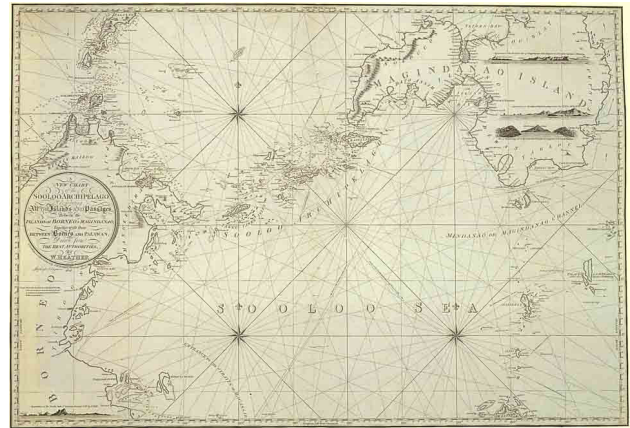


Fig.14. W. Heather, A New Chart of the Sooloo Archipelago Showing all the Islands and Passages between the Islands of Borneo, Palawan and Magindanao, 1820. Instituto de Historia y Cultura Militar, Madrid (Spain)

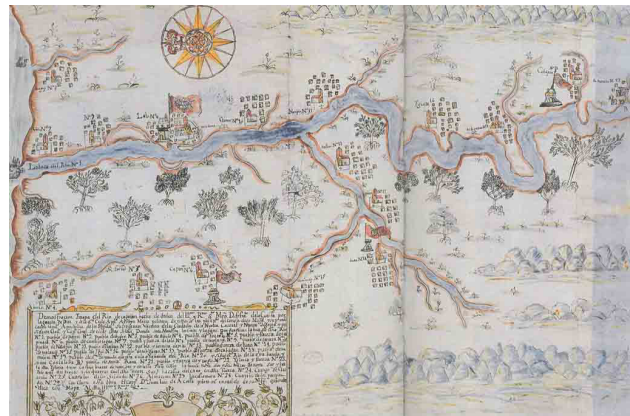


Fig.15. Juan Luis de Acosta, Plano del valle de Cagayan, 1720. Archivo General de Indias, Seville (Spain)

risks. Some of them, where secondary routes met, became large municipalities thus increasing the main road network.

The importance of some of these agricultural inland towns grew as the military control of the territories became an essential aim to safeguard Spanish interests and the population against foreign attacks. Since the beginning of the 17th century the Spanish Army needed to keep control of the colonized territories, and chose some strategical points where garrisons were quartered. As a consequence the main agricultural centres (Tarlac, Bambang, Ibung) received hundreds of extra inhabitants, and the old trade routes turned into itineraries that facilitated military manoeuvres: the main ones were Manila-Tarlac and Lapo-Bangui on Luzon Island, and Calamutang-Leyre on Samar Island. The telegraph lines also run along these routes.

In the 1890s the Manila-Dagupan railroad connected the capital city of Manila with the main inner market in the province of Pangasinan –the main sugar cane producer. The railroad stations also increased the growth and prosperity of the cities established there.

Main sites such as harbours and cities were thus



Fig.16. Pedro Andrés Burriel, Plano de la Isla de Samar, 1856. Instituto de Historia y Cultura Militar, Madrid (Spain). The map shows the main roads and cities

gradually linked through a dense network of roads and navigable rivers and canals. Their supply lines were assured through the terrestrial connections with the main agricultural areas (Batangas, Laguna) which were at the end of the land routes, as well as through maritime trade lines with the main cattle-raising area located on the Visayas Islands.

In the case of the ports of Manila and Cavite, the stones for building breakwaters and jetties were transported by barges plying along the Pasig River from the Bay Lagoon; the wood for the shipyards followed the route Iloco-Cavite, the canvas for the sails was woven in Ilocos, and the ropes were made of fibres of *abacá* that were mainly collected in the inland woods of Luzon. All the port cities were enlarged and internally improved through the construction of new entrepôts, breakwaters, piers or dry docks.

Other commercial strategies involved also the manufacturing, transport and the export of some valuable goods such as tobacco from Cagayan, which supposed the creation of the vast trading structure of the *Reales Fábricas de Tabaco* (Royal Tobacco Factories) in Manila, Havana and Seville.

5. Conclusions

As a first result of the comparative analysis of the collection of ancient maps of the colonial Philippines, it is possible to confirm that the Spanish colonization process had two ways of controlling the territories: the

foundation of sites and the creation of a road network related to them.

Sites were strategically located on headlands and in natural bays, and seldom fortified –particularly if on the coast. Depending on the harshness of the geographic environment and the friendliness of the natives, they remained as isolated harbours connected to the main maritime trading routes, or they developed both external seaborne and inland transport networks, which extended into a hinterland which provided essential materials. In these cases the importance of the concept of situation is greater.

The main urban types for site construction were those traditionally applied by the Spanish explorers and conquerors throughout the American territories: the more or less distorted grid –sometimes surrounded by a defence wall-, and exceptionally the irregularly shaped cities and even ideal plans. The itinerary linear type appears as a powerful urban typology in the Philippines, which has not been recognised until now.

A second conclusion which is still useful in urban planning and design, is that the Spanish towns were designed to take advantage of geographical and climatic conditions, as well as to reduce the risk of earthquake damage. As a consequence, settlements were established near springs or rivers, on windy plains or promontories. Streets were arranged according to the prevailing winds, and their width equalled the height of the buildings to avoid direct solar rays (Fig.5.). Main squares served as meeting points, being the true heart of the town; the fluency of urban spaces was also guaranteed through the structure of main and secondary streets, and a subtle relationship was also established by the system of back lots and outer plots.

As a third result, the land structures created by the Spanish over four centuries are evidenced by superposition of the collection of ancient maps. But old forgotten paths or plots can still be discerned on aerial photographs –by changes in colour and texture of the land cover-, and also by the images through remote sensing –which, for instance can show differences in temperature on the earth's surface.

An accurate analysis of both the historical documents and those provided by the contemporary techniques has proved to be a helpful tool in the study of the cultural heritage of the Philippines and for the preservation of the memory of its cities and territories. It will provide the main guidelines to future actions.

Notes

- ¹ Some of the most curious and interesting historical texts are dated between the 18th century and the early 20th century, and are mainly located at the Biblioteca Nacional de España, Madrid (BNE), the Museo Naval, Madrid (MN), and the Archivo del Palacio Real, Madrid (APR); they provide varied scopes, and among them we suggest: Morga, A. de (original 1609, 1997) *Sucesos de las Islas Filipinas*, Madrid, Polifemo; Valdés Tamón, F. (1739) *Relación de las Islas Filipinas* (Manuscript, MN); Le Gentil de la Galaisière, G.J. (original 1766, 1964) *A Voyage to the Indian*

Seas, Manila, Filipiniana Book Guild; Concepción, Juan de (1788-1792) *Historia General de Filipinas*, Manila (APR); Álbum de fotografías de vistas y tipos de Filipinas, (end of the 19th century), BNE; Aragón, I. (1819); Descripción geográfica y topográfica de la isla de Luzón o Nueva Castilla, Manila (BNE); Mas y Sans, S. (1843) *Informe sobre el estado de las Islas Filipinas*, 2 vols, Madrid (BNE); Buzeta, M. and Bravo, F. (1850) *Diccionario geográfico, estadístico, histórico de las islas Filipinas*, 2 vols, Madrid, Imp. José C. de la Peña; Jagor, F. (original 1875, 1965) *Travels in the Philippines*, Manila, Filipiniana Book Guild; Marche, A. (1887) *Luçon et Palaouan: six années de voyages aux Philippines*, Paris, Librairie Hachette; Blair, E.H. and Robertson, J.A. (eds) (1903) *The Philippine Islands 1493-1898*, 55 vols, Cleveland Ohio, The Arthur H. Clark Co. Among the architectural studies we recommend: Colección de planos correspondientes a varias de las construcciones establecidas o proyectadas por la Inspección General de Obras Públicas de las Islas Filipinas (1876) (Library of the Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos, Madrid); Angulo, D. (1939) *Planos de Monumentos Arquitectónicos de América y Filipinas existentes en el Archivo de Indias*, Universidad de Sevilla; Díaz-Trechuelo, L. (1959) *Arquitectura Española en Filipinas 1565-1800*, Sevilla, Escuela de Estudios Hispano-Americanos; Marco Dorta, E. (1973) *Ars Hispaniae*, vol. XXI: *Arte en América y Filipinas*, Madrid, Plus Ultra; Zialcita, F. and Martin, T. (1980) *Philippine Ancestral Houses*, Quezon City, GCF Publications; Alarcón, N.I. (1991) *Philippine architecture during the pre-Spanish and Spanish periods*, Manila, Santo Tomás University Press.

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³ The authors have been conducting field research on 'The historical evolution of the Spanish colonial cities and territories in America and Philippines' since 1998. The studies have been accomplished based upon the analysis of the ancient cartography and other written references. They are lately compared with the modern maps and aerial photographs, as well as with field observations.

⁴ Archivo de Indias (Seville): 127 maps; Archivo de Simancas (Valladolid): 78 maps; Biblioteca Nacional de España (Madrid): 176 maps and pictures; Archivo del Palacio Real (Madrid): 45 maps and drawings; Museo Naval (Madrid): 72 maps, charts and views, mainly from the Malaspina expedition; Centro Geográfico y Cartográfico del Ejército (Madrid): 246 maps; Instituto de Historia y Cultura Militar (Madrid): 54 maps; and Museo de los PP. Agustinos (Salamanca and Valladolid), 12 maps.

⁵ Recopilación de Leyes de los Reynos de las Indias (1791), 4th edition, Madrid. There is a 1943 facsimilar edition, printed in Madrid.

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