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研究課題名(和文) STUDY ON THE SPANISH FORTIFIED CITY SYSTEM IN THE PHILIPPINES

研究課題名(英文) STUDY ON THE SPANISH FORTIFIED CITY SYSTEM IN THE PHILIPPINES

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研究成果の概要(和文)：本研究の主な目的は、フィリピン諸島におけるスペイン植民地時代の要塞都市システムの形成と変容に関する研究である。本研究では、スペイン植民地時代(1521年～1898年)の3世紀以上にわたって、海外からの攻撃から守るためにフィリピン諸島の沿岸部に作られた植民地時代の要塞都市の地理的位置、都市空間、建築に関する研究に焦点を当てる。この要塞都市の形成は、フィリピンとスペインの公文書館が所蔵する史料や地図の研究により明らかにされる予定である。また、現在の都市空間と建築の現地調査に基づいて、その変容を研究する。

研究成果の学術的意義や社会的意義

the Spanish colonial urbanization process in the Philippines was carried on through a model of religious-fortified city as part of a system of coastal defense, which has not yet been studied and is the main object of this investigation.

研究成果の概要(英文)：The main aim of this research is the study on the Formation and Transformation of the Spanish Colonial Fortification City System in Philippine Islands. This research is focus on the study on the Geographical Location, Urban Spaces and Architecture of the Colonial Fortified Cities created during more than three centuries during Spanish colonial period (1521 to 1898) over the coasts of the archipelago of Philippines, with the purpose to protect against attacks from abroad. The formation of this fortified cities will be clarified by the studies of historical documents and maps from Archives of Philippines and Spain. The transformation study is based on the field survey of its current Urban Spaces and Architecture. Clarifying the fortification city system in the Philippines, this research seeks to contribute and expand knowledge of the past and heritage of these cities.

研究分野：建築史および意匠関連

キーワード：Philipine Islands Spanish colonial City Fortifications

1. 研究開始当初の背景

Modern-époque fortifications in Hispano America and the Philippines were built in accordance with a paradigm shift, where the expansionist policies of Spain was the impetus for such significations of power in these regions. Insofar as studying Spanish colonial defensive systems are concerned, recent scholarly works have situated them against this backdrop. However, in studying their specific roles in the overall political, economic and religious interests behind monarchical Spain's annexation, particularly of Hispano America and the Philippines, authors tend to consider them in a vacuum. This disregards the two important aspects of these defensive systems. Firstly, their construction was very well orchestrated following a religious, civil and military strategy that was uniquely applied in these two regions. Secondly, these fortifications did not function in isolation. They functioned as part of a local, regional and intercontinental network. The omission of these two important aspects leaves a big gap in the discourse about the genesis and historical-constructive evolution of Hispano American and Philippine-Spanish colonial fortifications. Moreover, removing these aspects from the equation disengages Philippine-Spanish fortifications from their global linkage.

2. 研究の目的

The objective of this study is to identify the emerging types of colonial fortifications in these two regions that are ascribed to their specific functions as part of a local, regional and intercontinental network. The peculiarities in their functions as a network influenced their location and style. With this knowledge gained, Spanish colonial defensive systems in Hispano America and the Philippines can be better understood for the purpose of properly conserving their tangible and intangible values and attributes

3. 研究の方法

The groundwork of the research was through the lens of cartographical maps and historical recounts that assist in determining how these defensive systems furthered Spain's sovereignty in the two regions, which is the focus of this study. 4,077 maps have been surveyed from the Archivo General de Indias (AGI), 858 maps of the Servicio Histórico Militar (SHM) and the 830 maps of the Servicio Geográfico del Ejército (SGE), for a total of 5,765 maps. A total of 1,216 architectural and urban maps of defensive systems that were planned or constructed in Hispano American and Philippine territories during the Colonial Period were selected from the afore-mentioned sources for inclusion in this study.

Focus on the Philippines Fortification, compilation of documents and literary works regarding the Spanish fortifications, data gathering included the compilation of unpublished documents, maps and sketches on fortifications and on the establishment of towns in the archipelago during the Spanish occupation from the Philippine National Archives (PNA) and the Servicio Histórico Militar (SHM). A survey of digital images of fortifications watchtowers have been conducted that were contributed by GIS sources. A geographical and territorial survey through maps was performed to further verify and analyze the forms and disposition of watchtowers relative to the church complex, as well as their strategic placements relative to landforms, terrain and other geographical features of the rural landscape. Field work was performed to document their varying conditions. From the in-situ data gathered, measured drawings of base plans, elevations, and sections of the most common types of watchtowers were then prepared to graphically represent how these were originally built.

4. 研究成果

(1) SPANISH COLONIAL FORTIFICATION SYSTEM.

The information provided by the Spanish colonial fortification maps were first classified according to five territories (1): North America (271 maps), Central America (250 maps), South America (274 maps), Caribbean (283 maps), and the Philippines (138 maps). Under the five territories, they were further classified into countries and places. Further categorizations of the architectural and urban maps were done according to location, period of construction, the emerging types and style. Historical recounts

and narratives of various authors about the Spanish expeditions, territorial discoveries, conquest, evangelization and colonization activities, as well as trading and warring events in these two regions were consulted.

Table 1 shows that within the 5 territories, there are places for which a relatively large number of urban and architectural maps of fortifications were produced from the 16th to the 19th centuries with almost 70% located in coastal areas. 805 out of 1,216 maps are of defensive systems located along the coast. There are 222 maps showing riverside locations, 96 were in-land while 93 are unknown or unspecified locations.

Based on the classification of these maps by periodization of production, there is a chronological order in the construction of defensive systems in these locations, that is from coastal areas to riverine territories and tributary waterways, and finally, to inland areas.

Table 2 indicates that the initial constructions took place in the 16th century with only 37 maps produced. In the 17th century, the number of maps increased five times, with more than 50% for coastal locations. About 25% of these maps produced were of river locations, indicating the onset of territorial defense along these waterways. The production of maps would peak during the 18th century, with an increase of more than 4 times from the 17th century. Although these maps were predominantly of coastal locations,

there is a major increase in the number of maps produced for riverside defense types as well as inland fortifications. This signals the intensification of control and defense of riverine and interior territories. The sudden decline in the production of maps during the 19th century. This coincides with the interruption in such constructions due to the fight for independence. The protection of such missions and pueblos that are near mining sites in the mountainous territories or along interior river basins were necessary to facilitate the spread

of the Catholic religion. Religious conversion was used to assimilate and gain control over the indigenous population who would extract or produce various commercial products for trading. These were transported by mule trains and then through river trade routes to their corresponding coastal transshipment ports to Europe. As the colonial situation in the Americas developed, the colonies were sending their riches systematically to Spain. Port cities emerged to cater to this commercial function, taking advantage of good geographical conditions for transit and transfer of fleets. Extensive fortifications were built to protect major trading port cities along coastal areas. The countries with the greatest number of maps produced are Cuba, United States, Philippines, Mexico, Venezuela and Colombia. This is owing to the defense of major trading ports like Havana, which is strategically positioned as a major hub for trading fleets that traveled to and from Europe in a convoy; San Agustin de la Florida in the United States; Veracruz in Mexico; Cartagena de Indias in Colombia, a major hub where silver is brought from Potosi to the transshipment ports of El Callao, Panama City and Portobelo; Puerto Cabello, Maracaibo and Cumana in Venezuela. In Asia, Philippine maps were produced mainly for fortifying Manila and Cavite. The extensive defense system along the coastal areas with at least one strategically established major port in all five territories, indicates that importance is given to the control of coastal waters to gain Spanish dominion over commercial trade. The increase in the number of maps

Table 1 - Fortifications per Region,

Territory	Country	Location				Total
		Coastal	River	Inland	Undetermined	
North America	United States	29	83	1	25	138
	Mexico	103	11	6	13	133
	Subtotal					271
Central America	Guatemala	1	1		1	3
	Nicaragua	3	18			21
	Honduras	25	3			28
	Panama	57	17	2	2	78
	Costa Rica	2				2
	Colombia	95	12	6		113
	Ecuador	1	4	0	0	5
Subtotal					250	
South America	Argentina	4	13	1	1	19
	Chile	22	3	3	3	31
	Uruguay	28	9	1	4	42
	Bolivia		1			1
	Brazil	1				1
	Paraguay		5			5
	Undetermined	1			1	2
	Peru	38	2		2	42
	Venezuela	78	21	27	5	131
Subtotal					274	
Caribbean	Cuba	147	4	27	15	193
	Dominican Republic	24	0	0	3	27
	Puerto Rico	29	1	0	1	31
	Haiti	2	0	1	0	3
	Saint Martin	1	0	0	0	1
	Bahamas	1	0	0	0	1
	Trinidad y Tobago	8	0	0	2	10
	Guayana	2	8	7	0	17
Subtotal					283	
Asia	Philippines	103	6	14	15	138
	Subtotal					138
Total		805	222	96	93	1,216

Table 2 - Location of Defensive System and Timelines

Timeline	AGI				CDU				Total
	Coastal	River	Inland	Undetermined	Coastal	River	Inland	Undetermined	
16th	24	6		7					37
17th	128	50	9	14	1				202
18th	312	97	56	45	264	47	23	14	858
19th	21	11	1	2	53	11	7	9	115
unknown	1			2	1				4
Total	486	164	66	70	319	58	30	23	1,216

produced during the 17th and 18th centuries can be attributed to defensive systems of new port cities such as Panama City, Portobelo, El Callao, Puerto Cabello, and improvements done on existing ones to ensure their impregnability against attacks by the the British, French and Dutch. New and large scale projects responded to the intensified international trade and to the advancement in warfare technology. Defensive systems that functioned in an intercontinental network were planned, including San Juan de Ulúa in Veracruz, Mexico, a principal port of New Spain in the Gulf of Mexico and San Diego in Acapulco de Juarez, a major port in the Pacific coast of Mexico. These two ports were the primary linkage of the trans Pacific trade route between Spain and the Philippines through the Manila Galleons. Cavite and Manila in the Philippines were the main Spanish trading ports in the Far East, acting as Europe's commercial link to China. Inland fortifications were essentially built during the 18th century in order to protect port cities from high ground and supplement the local network of defense. Examples are located in Cumaná and La Asunción in the Isla Margarita in Venezuela, as well as those in Havana, Cartagena de Indias, Guaira, among others.

(2) SPANISH COLONIAL FORTIFICATION TYPES

Based on their function in a local, regional and intercontinental network, the different types of defensive systems were constructed to serve their varying circumstances of defensive needs and depending on the technological advancements of the times. Table 3 shows their classification according to 4 main types of fortifications, namely Permanent Fortifications with 9 Subtypes; Parts of Permanent Fortifications with 8 Subtypes; Outworks with 7 Subtypes; and Field Fortifications with 5 Subtypes. The Permanent Fortifications are further classified into Urban Civic Fortifications and Urban Military Fortification. The number of maps that were produced for each type and subtype, the number of maps per location and the number of maps in terms of style or shape of plans.

(A) Permanent Fortifications

(A.1) Urban Civic Fortifications

Urban civic fortifications were constructed to protect urban settlements that are occupied by the general population. There are three subtypes under this category, namely the Plaza, the Ciudadela and the Fortificación.

a) Plaza, Ciudad (Plaza): The plaza, also referred to as ciudad, plaza marítima, or ciudad murada, is an Urban Civic Defensive type that is circumvallated by extensive walls and several fortification types acting in a system. It is a type that was employed since distant periods in Europe. However, in the context of the Spanish colonial period it was used extensively to protect both major and minor trading port cities and is essentially located at coastal areas.

b) Ciudadela (Citadel): Based on their European precursors, the ciudadela is a defense core located at elevated portions of an urban area to protect its inhabitants below. It is smaller in scale compared to a city. However, based on the maps studied, these are located along the coastal lowlands or are riverside.

c) Fortificación (Fortification): The term fortificación refers to a compendium of military defense structures located within and around urban areas.

(A.2) Urban Military Fortifications: Urban military fortifications are installations that comprise military defensive structures, auxiliary buildings and support facilities that are occupied only by the military. These military zones have 6 subtypes, as follows:

Table 3 – Number of Maps According to Fortification Types, Location and Style

Types	Subtypes	Coastal	River	Inland	Undetermined	Total	Palisaded	Bastioned	Polygonal	Star	Geometrical	Undetermined	Total	
Permanent Fortifications	Urban Civic	Plaza	107	9	1	4	121	0	86	26	4	0	5	121
		Ciudadela	4	2	2	0	8	0	4	2	1	1	0	8
		Fortificación	47	6	0	0	53	2	23	14	12	0	2	53
	Urban Military	Fuerte	202	90	44	44	380	21	102	177	46	7	27	380
		Castillo	180	50	22	3	255	2	70	145	17	8	13	255
		Fortaleza	18	5	1	2	26	0	9	11	4	0	2	26
		Casa Fuerte	4	4	0	4	12	1	5	2	0	1	3	12
		Presidio	7	12	0	1	20	1	3	11	3	0	2	20
		Bateria	61	6	4	10	81	1	59	9	0	0	12	81
		Total	630	184	74	68	956	28	361	397	87	17	66	956
Parts of Permanent Fortification	Cortina	8	0	2	0	10	0	3	1	1	0	5	10	
	Muralla	44	0	0	7	51	0	24	4	0	0	23	51	
	Recinto	7	2	0	0	9	3	3	2	1	0	0	9	
	Torre	8	4	0	0	12	0	8	1	2	0	1	12	
	Torreon	6	0	0	0	6	0	5	1	0	0	0	6	
	Plataforma	3	0	0	0	3	0	3	0	0	0	0	3	
	Baluarte	12	1	0	1	14	0	7	3	0	0	4	14	
	Baluartillo	1	0	0	0	1	0	0	1	0	0	0	1	
Total	89	7	2	8	106	3	53	13	4	0	33	106		
Outworks	Outworks	17	3	5	2	27	0	3	0	0	18	6	27	
	Reducto	24	9	3	9	45	2	16	12	2	0	13	45	
	Revelin	11	4	3	0	18	0	6	1	0	10	1	18	
	Minor Works	15	1	0	0	16	0	9	3	0	0	4	16	
	Camino Cubierto	0	0	1	0	1	0	0	0	0	1	0	1	
	Hornaveque	1	0	2	0	3	0	0	2	0	0	1	3	
	Atrinchamiento	2	2	0	1	5	0	2	0	0	0	3	5	
Total	70	19	14	12	115	2	36	18	2	29	28	115		
Field Fortifications	Fuerte Provisional/ Fuerte de Campaña	10	9	3	2	24	6	7	11	0	0	0	24	
	Portin/Fortin de Campaña	2	3	3	2	10	1	4	3	1	0	1	10	
	Campamento	1	0	0	0	1	0	0	0	0	0	1	1	
	Hornaveque Provisional	1	0	0	0	1	0	0	0	0	0	1	1	
	Bateria Provisional	2	0	0	1	3	0	3	0	0	0	0	3	
Total	16	12	6	5	39	7	14	14	1	0	3	39		
Grand Total	805	222	96	93	1,216	40	464	442	94	46	130	1,216		

a) Fuerte, Fuerza (Fort): The fuerte, or fuerza, is an Urban Military Fortification and a Permanent Fortification that is occupied by soldiers and buildings related to military operations. Fuertes are one of the earliest defensive structures, next to the casa fuerte. These are initially built as an independent type, acting as the core of defense of newly established coastal towns and riverine settlements.

c) Fortaleza (Fortress): The fortaleza is also an Urban Military Fortification and a Permanent Fortification. It is a large-scale military zone that can house a large battalion. This type resulted from the extensions and improvements performed on the fuertes and castillos due to the intensified enemy attacks and increased demands in protecting maritime plazas.

d) Casa Fuerte (Strong House): The casa fuerte is an Urban Military and Permanent Fortification. It is a type that precedes the fuerte and has a more domestic character that is comparable with medieval castles.

e) Presidio (Garrison or Garrison Town): The presidio (garrison or garrison town) is an Urban Military and Permanent Fortification. The presidio had the dual role of protecting these missions and settlements from indigenous resistance and attacks from enemy pirates

f) Batería (Battery): The batería is an Urban Military and Permanent Fortification for military use. In the 16th century, it functioned as a gun emplacement for cannons located below the castillo, close to the level of the sea.

(B) Parts of Permanent Defensive Systems

Integral to the construction of the various Permanent Defensive systems are their parts that are crucial for their impregnability to sieges and enemy attacks. These are categorized according to bastions, small bastions, platforms, precinct, curtain walls or muralla, and towers.

(C) Outworks: The Outworks are technically parts of Permanent Defensive Systems. They act as additional layers of defense. Due to the advancements in warfare technology, fortifications became more entrenched with multiple protective layers facing land³⁾.

(D) Field Fortifications

Field Fortifications are provisional fortifications built during the 18th and 19th centuries. These barriers sometimes spanned 40 kilometers, cutting across islands to eliminate communication between enemy forces. In the Philippine context, these were built in coastal, river and inland locations to defend against Moro attacks motivated by trading disputes and slave raids. In this context, field fortifications functioned both in a local and regional network of defense.

(3) THE SPANISH FORTIFICATION SYSTEM IN THE PHILIPPINES

From the late 16th to the early 19th centuries, Spanish military presence in the Philippine Islands was limited. In 1739 the Governor of the Philippine Islands Fernando Valdés Tamón sent a report to the Spanish Crown describing the state of military installations in the territories under Spanish rule; only 20 military fortifications were built in the Philippines until that year. With the lean military presence, the task of protecting native communities under the colonial resettlement system or reducción against muslim attacks was assumed by the Spanish missionaries. The friars supervised the native settlers in building defensive systems composed of the fortified church complex and the watchtowers, which functioned as structures for vigilance and defense. The entire archipelago has 53 fortified churches (28 of which are surrounded by protective walls) and a total 149 watchtowers. In Cebu Island alone, there are 12 fortified churches (6 of which are walled) and 38 watchtowers.

In the absence of Spanish military presence and war material in the regions of Philippines, Spanish missionaries created an alternative fortification system for the coastline based mainly on surveillance and early warning of the population. This system involved the participation and collaboration of the indigenous communities, as well as that of the churches. This system is connected by watchtowers in the strategic locations, with a hierarchy of distances between urban and extra-urban protections. It is based on two types of communication: visual with flags and fireworks for long distances and auditory with bells for the urban area.

The fortification system of watchtowers created by Spanish missionaries Bermejo during the 19th century to protect the south eastern coast of Cebu Island from Muslim attacks, Bermejo created a hierarchical system of buildings with the design of three different types of watchtowers for surveillance, auditory alerts and visual alerts. The participation of the indigenous people was also fundamental in that their local building practices and construction techniques were used in building the watchtowers.

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〔産業財産権〕

〔その他〕

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6. 研究組織

	氏名 (ローマ字氏名) (研究者番号)	所属研究機関・部局・職 (機関番号)	備考
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7. 科研費を使用して開催した国際研究集会

〔国際研究集会〕 計0件

8. 本研究に関連して実施した国際共同研究の実施状況

共同研究相手国	相手方研究機関
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