

Nineteenth-Century Pueblo Establishment on the Northern Central Luzon Plain: What Can Be Told from an Archaeology of Cuyapo, Nueva Ecija

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ABSTRACT

The creation of *pueblos* in the northern parts of the Central Luzon Plain during the 19th century was influenced by international economic, technological, and social developments. The reasons for establishing pueblos during this period significantly differed from the causes of colonial settlement creation in earlier centuries, the latter due to the need to concentrate populations to further ecclesiastic and administrative motives. Cuyapo in Nueva Ecija is a case in point. It exemplifies a tiny settlement of homesteaders formed around the mid-1800s that grew into a town as migrants from the Ilocos coast and the surrounding areas of the Agno and Rio Chico de Pampanga basins continued to flock into the frontier community. An archaeological investigation of a Cuyapo residential compound shows an apparent short span of settler occupation accompanied by high-status artifacts. This suggests a quick emergence of a middle class in the community as the town was drawn into the transformative events prevailing at that time.

Keywords: Central Luzon, Cuyapo, pueblo, archaeology, diaspora, environment

Introduction

The Hispanic colonial period is a convenient milieu where research about past settlements and household patterns of the Philippines is still viable. Investigations could be informed by written documents, the visibility of the continuity of the material landscape of a town from the past to the present, and the sustained collective memory of inhabitants. The reorganization of the Philippine islands beginning in the 16th century at the onset of Spanish occupation was a potentially pan-archipelagic event that modified the economic, social, and political environments. These changes, whether intentional or otherwise, were facilitated by the creation of small, new urban centers called *pueblos*, a term that could be translated into the English

word “towns,” and the territories included in their administration as “townships.” The term *pueblo* has been applied to both concepts of “town” and “township.”

Pueblos were built throughout the four centuries of the Hispanic colonial period. The causes of *pueblo* creation however differed within the whole span of this colonial period. A simplified model about these causes could be presented as follows. Initially during the early years of colonial rule, the main cause for *pueblo* establishment was the imperially instituted campaign for *reduccion*, which mandatorily required the relocation of people into new towns for effective control of the population (Doeppers 1972, 774). The new towns were the local centers where new religious converts took up residence, and also served as springboard from which missionizing activities were carried out into the colonial hinterlands. The towns were also the seat of political administration from which rules and the law were implemented, such as the imposition of tributes, taxes, and measures to realize social order.

On the other hand, during the later years of the colonial period, the reason for creating new pueblos was the partitioning of older townships into new ones due to a number of factors. One of these was the significant increase in population in the satellite communities under the older townships; another was the change in status of settlements where a satellite community became economically powerful; or access to a territory was deemed challenging and had to be organized into a separate political unit. For instance, eastern Pangasinan witnessed the enlargement of new settlements in the 19th century with the onset of significant migrations from the Ilocos, overtaking the population sizes of older townships created by *reducciones* in the previous century (Keesing 1962, 87). This migration-and-town-founding pattern continued up to the early 20th century in the remaining unorganized areas of northern Luzon, such as the valley of the Cagayan headwaters often referred to as “Binatangan” (Keesing 1962, 297–98).

In this project, I looked into the characteristics of one *pueblo* that was established in the last century of the Spanish colonial period. The town in consideration is Cuyapo. Occupying the northwest corner of Nueva Ecija province, the municipality of Cuyapo encompasses the population and territory of Cuyapo town and surrounding villages. Along with its “offspring” town, Nampicuan, it is one of only two municipalities in Nueva Ecija that are not on the Pampanga River basin. It is physiographically part of the eastern Pangasinan landscape that lies on the basin of the Agno River. What makes Cuyapo different from the great set of Nueva Ecija towns is its ethno-linguistic orientation towards the cultural sphere of northern Luzon, different from the southern part of the province which is

basically Tagalog and Kapampangan in language and culture. This ethnolinguistic orientation of Cuyapo was the result of a series of migrations especially during the 19th to early 20th centuries as a result of economic and social stimuli in both the Central Luzon Plain and the original homelands of the migrants. These migrations played a major role in the establishment of Cuyapo *pueblo*.

I am approaching the study of Cuyapo as a settlement from the perspective of archaeology. In this particular case the focus is on households which, along with more prominent structures of Philippine colonial settlements such as the church-plaza complex, comprised the built-up area of the colonial town. By probing into the conditions by which a town of the later colonial period came into being, this investigation situates itself within diaspora studies as it attributes the creation of pueblos to significant migratory surges that happened in the 19th century. In choosing an archaeological approach, the study contributes to an understanding of pioneering communities by highlighting the role of artifacts and the physical and cultural environments in settler dynamics. This investigation aims to answer the following questions: 1) What could the archaeological record tell us about the sequence of historical events associated with the establishment and development of the settlement of Cuyapo? 2) What could this archaeological study tell us about the founding and development of towns on the northern Central Luzon Plain established in the 19th century?

The Discourse of Diaspora and Cuyapo

Migrations are events with powerful and long-lasting impacts on the economic, political, and social situations of ethnic groups and populations. It is not surprising that studies on migration have attained a significant place in Philippine social science scholarship because the phenomenon continues to affect Filipino experience and reality. Filipino migration, past and present, has led to inquiries about the causes, processes and outcomes of diasporas that have transformed ethnicities, populations, environments, social values, and norms.

Among the celebrated examples of Filipino migrations still alive in the imaginary of descendants is the Ilocano diaspora that became a significant force in settlement formation at the beginning of the 19th century and continued well into the next century. The causes of this diaspora are often framed in an environmental deterministic paradigm. Basically, it highlights the inability of the Ilocos coast to sustain unusually high populations because of the relatively insufficient productivity of land in the region (Xenos 1998, 44–45).

Yet, it is not only the unproductive environment of the Ilocos that is said to have pushed people into the Central Luzon Plain. Colonial governance factored in as well. For instance, the 1762 uprising headed by Diego de Silang was the culmination of a growing discontent towards regional colonial administration in the Ilocos (Keesing 1962, 160). In the Laoag area 28 years later, violent protests arose to oppose the tobacco monopoly by the government; and by the early years of the 19th century a similar revolt occurred due to institutionalized control of making wine from palm and sugarcane (Keesing 1962, 160). At this time too, the government was ordering men in the region to contribute uncompensated labor to public works and the construction of town buildings. Local histories inform us that obligatory labor started in Batac in 1805 (Chronological History of Batac 1953); and that in Lucaban, a *barrio* of Burgos, torture was imminent to those who disobey the order (Historical Data of Lucaban n.d.). Likewise, the pioneering narratives of Cuyapo tell of the migration *en masse* of townsfolk from Santa Maria (Ilocos Sur) to escape the labor enforced by the Augustinians in the building of the parish church (McLennan 1980, 120). The memory of these fateful migrations still lingers among the older inhabitants of the northern municipalities of the Central Plain, and has been integrated into their folklore. The Filipino literary giant, F. Sionil Jose (1984), has written a novel recreating the experiences of a 19th century homesteading family moving into the Central Plain. This novel was informed by anecdotal stories gathered from his conversations with Rosales (Pangasinan) townsfolk.

In this dramatic narrative of an ethnic migration, the populated and constraining land of the Ilocos coast is contrasted against the Central Luzon Plain which has often been portrayed as a land of promise characterized by a great abundance of land, resources, and opportunities. Industry and thrift, so much a part of the Ilocano ethos, are said to be rewarded only with poor returns in the homeland, and there is a perception that a better way of life can be attained in new places where land is there for the taking (Fonacier 1953, 91–92). As such, the available literature on the roots of conflicts and diaspora about the Ilocos and its people generally carries noticeable ecological overtones (Pecson 1916; McLennan 1982; Scott 1986; Xenos 1998). Given the theoretical genealogy of this particular discourse coupled with the material culture approach of archaeology, we therefore begin by seeing Cuyapo through an environmental perspective.

The Environmental Setting

Cuyapo is located on the northern part of the physiographic region known as the Central Luzon Plain, and forms the northwestern

protrusion of Nueva Ecija which borders the provinces of Pangasinan to its north and Tarlac to its west (Figure 1). The Central Luzon Plain extends from the shores of the Lingayen Gulf in Pangasinan province to the mudflats of Manila Bay in the south. Its eastern borders are delineated by the Sierra Madre Ranges, at its western limits are the Zambales Ranges, and its northern edge is flanked by the Cordillera Central and Caraballo Sur mountain ranges. Two major river systems drain this big plain: the Agno River and its tributaries, fed by waters coming from its northwestern area, eventually flowing into the Lingayen Gulf; while the Pampanga River bisects the plain in a northeast-southwest direction, remitting its waters and those of its tributaries to the sea via the Manila Bay. Other river systems, like the Angat and the Pasag-Potrero, drain the southern reaches of the Central Luzon Plain.



Figure 1. Location of Cuyapo in Central Luzon. (Map by J.G.L. Medrana)

Cuyapo is one of the towns of the lower Agno basin, the northwestern area of the Central Plain that gradually descends into the Lingayen Gulf. Because of the watery conditions of the place, tracts of wetland exist. The *Mangabol* between Moncada (Tarlac) and Bayambang (Pangasinan) is a marsh that grows into a seasonal lake during the rainy season because of run-offs from the confluence of the Agno, the Tarlac, and their tributaries; likewise in the mid-19th century a lake called “Ladiavin” created by flood regimes of the Agno was said to have existed in the vicinity of San Carlos (Pangasinan) (Mendoza-Cortes 1974, 11; Crawford 1856, 7). Within Cuyapo municipality are numerous *tanggal*, or small lakes, the most prominent of which is

Lake Paitan (or Lake Libsong), about eight kilometers northeast of the *poblacion*. Also noticeable in the landscape are the hills of *Bantay* (Mount) Cuyapo, Amorong, and Balungao that rise above the plain along the Nueva Ecija-Pangasinan border. These hills are part of a volcanic chain that includes Mount Arayat to the south (Peña 1998).

Palynological data from Lake Paitan show that within the past 9,400 years the frequencies of cogon (*Imperata* sp.) growth in the Cuyapo environment alternated with that of trees, the former tending to be more numerous in the drier phases of the Holocene (Tashiro et al. 2015, 95). The accompanying sediments here also corroborate with deposits from other central Luzon sites regarding a major eruption phase of the Pinatubo Volcano affecting the region at around 2,300 years ago and earlier, termed as the Maraunot Eruptive Period (Newhall et al. 1996, 187). Drier conditions may have generally prevailed from 2500 to 1400 years ago as reflected by the preponderance of cogon and other grasses, based on a study of phytoliths from the lake's sediments (Yoshida et al. 2011, 73). At around the eighth century CE the pollen profile suggests a more forested environment and a temperature lower than that of the past few centuries when pine (*Pinus* sp.) and trees of the genus *Melia* were numerous, together with agoho (*Casuarina* sp.), *Bombax* sp., *Barringtonia* sp., *Terminalia* sp., and trees belonging to the Arecaceae family. Although most trees have disappeared within the more recent centuries, *Melia* sp. became higher in frequency (Fujiki et al. 2013, 78). Furthermore, the phytolith profiles give a date of around 350 years BP (or early 1700s) for the plausible first appearance of the rice (*Oryza* sp.) plant in Cuyapo (Yoshida et al. 2011, 65).

The rainfall regime characteristic of the northern Central Luzon Plain is the dry type in which rain can be expected for only six months of the year (McLennan 1980, 15–16). Owing to these primary rainfall and soil types, the original (primary growth) vegetation of the area may have been one of true *molave* formations (named from the type species *Vitex parviflora*) in the colonial period. These are open forests where big trees are spaced far from each other, and the spaces between them occupied by small trees and plants. Another primary growth type is the *buri* formation (named from the type species *Corypha elata*) that may have been prevalent in marshy conditions. Second-growth woodland associations, vegetation types consisting of woody and herbaceous growths that are anthropogenic in origin, may have been present when Cuyapo was settled in the early 19th century (McLennan 1982, 62–63).

The Settling of Cuyapo

The events leading up to the domestication of the Cuyapo frontier territory could be thought of as part of a grand plan by the colonial

government not only to facilitate access into the Igorot goldmines of the Cordillera region but also to connect two separate realms of Christianized settlements. The latter pertains to ensuring a safe overland passage across the mountains of the Caraballo Sur that would link the Cagayan Valley with the Pampanga basin. Both reasons necessitated the *reduccion* of people on this mountainous interior, and campaigns for bringing this to fruition were initiated by the religious orders by the closing years of the 17th century.

I suggest that the area consisting of the southern Cordillera foothills and eastern Pangasinan plain be seen as a hinterland that stood as transition zone between the Cordillera and the nucleus of colonial Pangasinan culture centered on the lower reaches of the Agno and its environs. This area served as a vital corridor for Dominicans who regarded it as a base for their religious forays into the mountains. It also allowed indigenous highlander-lowlander trade and communication through the canyons of the Bued, Agno, and Ambayaoan Rivers (Scott 1974, 62). It was here where the missionaries settled their Christian converts of Igorot, Agta, and many ethnic groups into new communities, strengthened their adherence to Catholic doctrine and practice, and even taught technologies of a new lifestyle like colonial agriculture (Keesing 1962, 76). The frontier pueblo of Asingan became the terminal for a modest trail opened by the government in 1739 linking Pangasinan with the Magat Valley at present-day Aritao on the other side of the Caraballo Sur (Ustariz 1903, 134–35).

Convert resettlement from the highlands, raid disturbances of these original settler communities, and refusal of many converts to move to newer settlements created a demographic mix in this transition zone comprised of new highlander converts, convert reverts to the indigenous system, and escapees from colonial society called *remontados* (De Salazar 1903, 76–77). Even before the official establishment of *rancherias* in the area during the second quarter of the 19th century (Rodell 1992, 76), it is possible that its conditions also extended to the Cuyapo area before the great migrations of the 19th century. As part of this transition zone, Cuyapo may have been a territory under the influence of people from the southern Cordillera foothills especially as evangelical work from Pangasinan was revitalized in the closing years of the 17th century. Entry of new converts in the early colonial period, their dispersal particularly in times of crisis, and also the movement of other displaced groups into the place consequently affected the environment. The widespread growth of secondary-type vegetation and the presence of domestic rice in the area before the 19th century are evidence of chronic human alterations in the Cuyapo environment.

On the upper basin of the Pampanga, a parallel missionizing project by the Augustinians founded new villages of converts at the foothills of the Sierra Madre and valleys of the northern mountains (McLennan 1980, 60–63). Among these were Pantabangan and Carranglan which were upgraded into pueblos at the start of the succeeding century (McLennan 1980, 179; Keesing 1962, 70–71) and positioned to be the missionizing bases of the Caraballo Sur. Almost simultaneously, the Upper Pampanga basin was designated a military *comandancia* called Nueva Ecija under Pampanga province in 1705 (McLennan 1982, 58).

The missions of Pantabangan and Carranglan proved to be effective as these facilitated the evangelization of the northern parts of the Central Plain and adjacent hills. Furthermore, these pueblos hastened the colonization of the Magat valley (Scott 1974, 75–80), a key passage to the Cagayan towns. Villages of Agta, Ilongot, Gaddang, Igorot, and other ethnicities were created in both upland and plain to accommodate the growing number of converts. San Jose in northern Nueva Ecija was among the *visitas*, or ecclesiastical satellite communities, of these two towns and by 1707 became the residence of a missionary priest who administered the Christian sacraments to Lupao and other settlements as San Jose, in turn, took these new communities as its own *visitas*. When Lupao became a pueblo of Agta converts in the 18th century, it included the territory that was to become the townships of Umingan, San Quintin, Talugtug, Balungao, Rosales, Cuyapo, and Nampicuan. This vast territory was placed under Umingan when it was elevated as a pueblo in 1849, and four years later its *barrio* of Rosales became independent which, in turn, had its territory carved out for the new pueblo of Cuyapo in 1858 (McLennan 1980, 179–83). Therefore from the partitioning of Lupao in 1849 the other settlements became parishes in rapid succession within a span of only less than ten years as populations increased brought about by the great migrations to the Central Plain in the 19th century.

Before the influx of major ethnic groups such as the Ilocano, Pangasinense, and Pampango as homesteaders and *hacienderos*, those who inhabited the northern Central Luzon Plain may have been the Agtas and possibly other marginal ethnic groups. The hilly plains and foothills between the Agno and Pampanga Rivers of the northern Central Plain were said to be home to the *Baluga* in the 18th century (Keesing 1962, 75). The demographic admixture would have been composed of the Agtas and also transplanted converts from the Cordillera, who may have been living within the territory of Cuyapo even before the 20th century (Beyer 1947, 223). Members of the Bago ethno-linguistic group are known by Cuyapo folk to reside in the *barangays* of Malineng and Sabit “ever since” (Arthur Cansino, pers. comm., 31 October 2002). T.W. Thomson, who was part of the first batch

of Thomasites to the country, reported on the cultural characteristics of a distinct group of people referred to by various names as “Igorot,” “Bago,” “Tingguian,” and “Itinig,” and who were living in the *barrios* of Bued, San Carlos, and Matindag in 1902, with a total of about 450 individuals (Thomson 1902). Unfortunately, information is lacking on whether or not the presence of Tingguian and Bago in Cuyapo antedate the coming of the Ilocanos and other migrant ethnic groups that started in the 19th century.

What we know about Cuyapo since its appearance in the 19th century until the early 1950s was largely furnished by Jose Reus, a public officer of the municipality who authored the historical writings for his town in compliance with a national government order in 1951 to collect historical information on local government units. The informants of Reus were the town elites, who had a strong family heritage, and the elderly inhabitants who still had living memory of events extending far back into the past (Rodell 1990, 18). According to Reus, Cuyapo’s name was derived from that of the aquatic flowering plant *Pistia stratiotes*, which was said to be growing in abundance in the area when the pioneers arrived. Called *Cuyapo* in the Pangasinan language, *Kiapo* in Tagalog, and *Luluan* in Ilocano, the plant is a floating species that thrives in marshy conditions (Reus 1952). The first settlers arrived in the 1830–1840s (Rodell 1992, 76). Among the first settlers were cattle ranchers from the neighboring pueblos of Pangasinan and homesteaders from the Ilocos coast. In a span of two decades, an accelerated migration of Ilocanos, many of whom came from the Ilocos Sur pueblo of Santa Maria, prompted the establishment of a new pueblo in the area (*Erección del Pueblos*, Nueva Ecija 1837–1897).

The demographic pattern of this frontier town established in the 19th century is shown in Table 1. Registered as a *barrio* of Umingan pueblo in the 1840s, the nascent community of Cuyapo in 1849 had a population of around 300. Transferred to the newly created pueblo of Rosales in 1852, and then constituted as an independent pueblo itself in 1858, the township attained a seven-fold increase in population by 1862. In 1870, Cuyapo’s population was noted to be at 2,913. From 1871 to 1876 the figure almost doubled in number, and eight years after there was a dip in the trend. It is possible that this stagnation and slight population decrease was due to a cholera epidemic that ravaged northern Central Luzon in the 1880s, when Pangasinan province lost 7.7 percent of its population to the disease, according to a report in 1883 (*Memoria medica de Pangasinan* 1883). In a span of three years, however, the figure again doubled and continued a significant positive trend into the opening years of the 20th century.¹

Table 1. Population of Cuyapo pueblo, 1849–1903.

Year	Population
1849	< 300
1861-1862	2,242
1870	2,913
1871	2,800
1876	5,348
1884	5,100
1887	10,748
1903	16,292

Sources: Reus 1952, 11; *Erección del Pueblos, Nueva Ecija: Expediente sobre erección de una nueva parroquia en el pueblo de Cuyapo independiente de su matriz* Rosales 1871; *Erección del Pueblos, Nueva Ecija 1837-1897*; *Memoria de la Provincia de Nueva Ecija: Distrito Judicial de Nueva Ecija: Estado por pueblos que determina la extensión* 1884; McLennan 1980, 354–73.

An Archaeology of Cuyapo from a Residential Compound of Households

The works of Beyer constitute the earliest archaeological investigations on the Central Luzon Plain, in which sites in Porac and Lubao (both in Pampanga province) have been examined. Beyer also conducted surveys on Bulacan province where archaeological materials like potsherds and tektites had been collected from the Marilao River basin and the Novaliches-Ipo Reservoir areas (Beyer 1949, 226–30). A recent trend in the archaeology of the Central Plains is the use of archaeological data to investigate flooding, an issue that is catching the attention of scholars focusing on the river basins of Pampanga and Bulacan (Neri et al. 2004; Hernandez 2010; Medrana et al. 2012). Nueva Ecija is relatively underrepresented in the archaeological literature. Among the few archaeological investigations conducted include those of a jar burial site in Carranglan, and of a possible Palaeolithic site in General Tinio (Evangelista 1957; Pawlik 2002).

Follow-up excavations have been made in Porac after the examinations of Beyer. In the succeeding decades, teams headed by Fox (1960), Bautista (1993), and Paz (2003) were refining our knowledge of the cultural sequence of the ninth to 16th centuries in the northwest Pampanga area. The work of Paz is especially relevant to how work in Cuyapo was conducted as it presents the site of Babo Balukbuk in Porac as a settlement site. Aside from reviewing the cultural sequence of Babo Balukbuk, Paz made attempts to describe a

pre-colonial settlement at the edge of the Central Plain by pointing to some aspects having potential in giving information about settlement characteristics. These aspects include posthole locations and the differential use of space within the site. We can see, for instance, that in excavating a residential compound such as the one in Cuyapo, seeing how parts of the compound have been used as either living space or refuse dumping ground can provide us information not only in terms of theoretical insights but also in adjusting our methodological plan of action in future projects.

The concerns of this study are the material culture aspects of settlement behavior in a community that took root only in the late colonial period. In this regard, the works of McLennan are commendable not only because he frames his studies of Nueva Ecija in an environmental historic framework, but also because he has an eye for the built cultural environment. He mentions certain aspects of material culture of the landscape within Nueva Ecija municipalities. Citing the observations of the writer Nick Joaquin, McLennan begins by mentioning the differences between the *poblaciones* or town centers of the lower Agno basin and those of the Manila Bay littoral, in which the settlements in the former possess a spacious plaza or square, and in the latter only a tiny space was allotted for the town plaza. He suggests that the differences may be due to the differential policies between religious orders controlling the areas, with the Dominicans in the north and the Augustinians in the south, and other causes like time of occupation, and the need for grazing areas within the *población* to avoid cattle rustling (McLennan 1980, 202).

McLennan also pointed out that among the towns of Nueva Ecija, there were varying patterns of human-directed arboreal vegetation exhibited by the urban landscapes of the *poblaciones*, as of the time of his writing in 1970-1980. He noted these general patterns: (1) the northwestern *poblaciones* of Cuyapo, Nampicuan, and Guimba have arboreal characteristics similar to those of Pangasinan, with wide plazas and tree-lined residential areas; (2) the southern *poblaciones*, the oldest settlements around which tobacco was cultivated, also exhibit much vegetation; and (3) the central and northern *poblaciones* as typified by Cabanatuan and San Jose are tree-sparse having an “insufficient screen of greenery to mask a dusty, rigid cubism” (McLennan 1980, 201).

According to him, the areas north of the older southern towns were the destinations of the new inhabitants of the province. There the settlers felt the need to transform the landscape into a huge rice-growing area to sustain themselves, cutting the original vegetation around their new homes in the process. There were exceptions to these, such as the northwestern towns that have been oriented more to Pangasinan, an area that has long been settled.

The site of archaeological investigation is located along Mendoza Street (formerly Cazadores Street) in Cuyapo *ili* or town center (Figure 2). Measuring 0.1 hectare, it was once part of a bigger estate that included neighboring residential areas owned by the patriarch of the De Gracia family during the early years of the 20th century. We have thus called this archaeological site the “De Gracia” site, and to which the National Museum of the Philippines had given the archaeological site number III-2013-S. At present the site has four houses (the oldest dates back to the 1920s) situated near the road, some facilities for livestock, and several trees. The De Gracia site where the excavation took place in April 2013 has been partitioned now into five separate properties, each either individually or communally owned by descendants of the original owners.

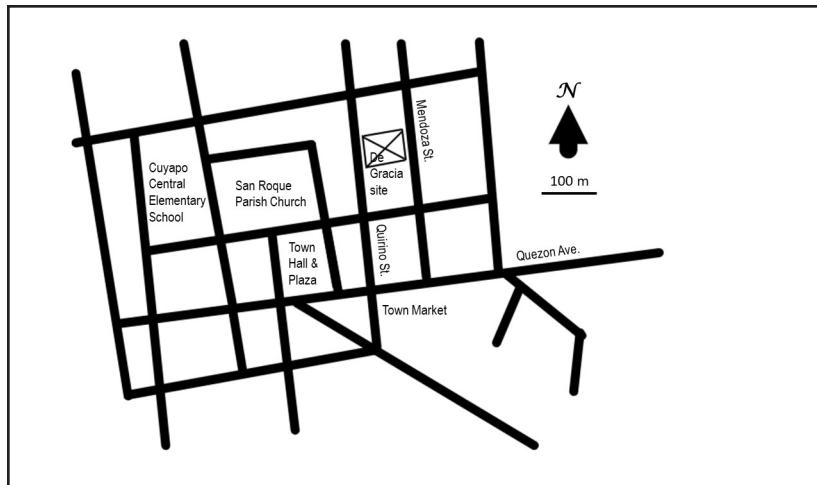


Figure 2. Location of De Gracia site in Cuyapo Poblacion. (Map by J.G.L. Medrana)

Being part of Cuyapo *población* or *ili* where the beginnings of colonial habitation in the municipality may have taken place, the De Gracia site was chosen for study because it could shed light on aspects of the occupation history of Cuyapo pueblo as a social unit. It is potentially reflective of what may have occurred in the center of this social unit. Regarding possible problems of site disturbance, it should be noted that Cuyapo was minimally affected by major upheavals such as destruction during the Second World War compared to other towns (Arthur Cansino, pers. comm., 8 January 2013). Furthermore, the site had only a few earth-moving activities with no full scale house-building and landscaping throughout its almost century-old ownership by the De Gracias, making it a good

candidate for investigating historical events of the past few centuries through archaeology.

The De Gracia site has been a residential area since the early 20th century, at least. It was part of a bigger, single property owned by Andres de Gracia that was later subdivided into land parcels for his offsprings. Andres was born in Santa Maria, Ilocos Sur in 1878 and earned his income through farming, according to his Special Cedula Certificate issued in Cuyapo (Andres de Gracia, Special Cedula Certificate, 10 January 1935). The lots comprising the De Gracia site were inherited by two of her daughters, Melchora and Dionisia. Melchora, her spouse Faustino, their children, and all other possible household members living with them resided in a house at the northeast corner of the site. Dionisia, her spouse Domingo, their children, and all other possible household members lived in a house a few meters south of Melchora's house. The houses along Mendoza Street to the east (Melchora's house and Dionisia's house), and another one at the northwestern corner of the site (Maring's house) are inhabited by the families of Faustino's nieces. A house close to the southern perimeter wall (Collet's house) is occupied by the family of one of Faustino's sons. Additional permanent structures on the site are a hog pen west of Melchora's house, and a smaller storage facility for farming tools and supplies on the west side of Dionisia's house (Figure 3).

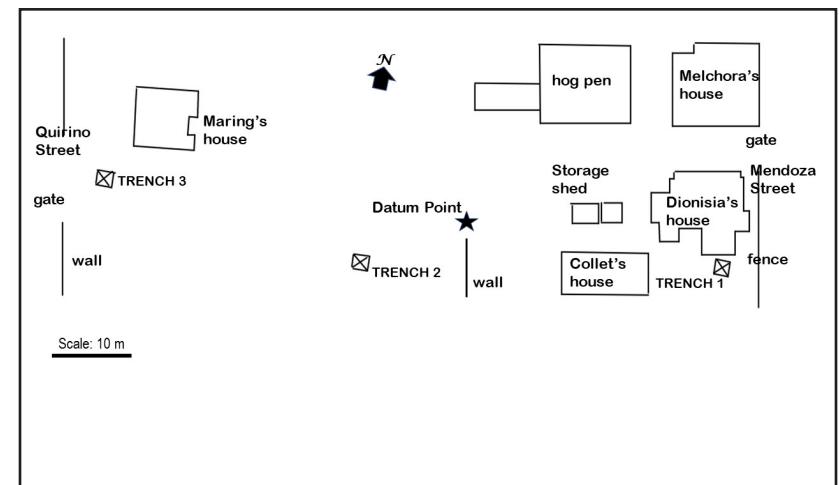


Figure 3. The De Gracia site, showing residential structures and the excavation trenches. (Illustration by J.G.L. Medrana)



Figure 4. View from the center of the site, looking towards Collet's house and Mendoza Street. (J.G.L. Medrana)

Melchora's house was constructed in 1929 with its stilted, wooden form. This was later modified in the 1960s with the addition of new receiving and dining areas, two bedrooms, a kitchen, and a bathroom made of hollow blocks and cement at the ground floor. The wooden posts of the original upper living space were retained. Dionisia's house in its present form was constructed in the latter half of the 1950s, after the death of Dionisia's spouse. Previously, a stilted house made of *buri* stood in its place, the existence of which could have antedated the establishment of the original Melchora's house. It was also in the latter half of the 1950s that Collet's and Maring's houses were built. The storage facility was said to have existed in or prior to 1950, while the hog pen came into existence before 1990. A house owned by another of Andres' children, Pedro, was made in the 1940s a few meters to the west of Collet's house (Arthur Cansino, pers. comm., 8 January 2013).

Method of Archaeological Excavation

The archaeological excavation was part of the field school of the University of the Philippines-Archaeological Studies Program (UP-ASP), which took place on 15–30 April 2013. Excavation of the De Gracia site was carried out by the graduate students of the UP-ASP and volunteers. The objectives of the project were to establish a working cultural sequence of the site, and to use such data to construct a preliminary model by which to study the historical archaeology of settler communities, particularly of 19th-century Philippines.

The team first conducted a survey to assess surface remains, vegetation and other features of the landscape pertinent to the archaeological project. A walking survey was done to search for artifacts and features on the ground surface that could help in deciding where the archaeological trenches will be created. The area around the vicinity where the trenches have been planned was mapped before digging commenced. This pre-excavation survey showed the site to be relatively flat, with a few elevated parts in places where termite mounds and present-day midden heaps are seen. Several trees grow in the site, among them mahogany, ipil-ipil (*Leucaena leucocephala*), and coconut (*Cocos nucifera*), with occasional wild shrubs and ornamental plants. The relevant archaeological artifacts seen as surface finds include earthenware and porcelain sherds, with higher frequencies at midden heaps. Porcelain sherds were being used in some of the children's everyday games in Cuyapo at least by the mid-20th century, and have been called *kumbirak* (Gerge Ysmael, pers. comm., 1 June 2013).

After a datum point was established as the point of reference for the whole site, a total of three trenches were opened with each trench measuring two meters by two meters. Trench 1 was dug close to the south side of Dionisia's house; Trench 2 was located about half the distance between Collet's house and Maring's house; while Trench 3 was a few meters southwest of Maring's house (Figure 3). A local datum point which served as reference point for each trench was assigned to each of the three excavation areas. All the vertical distances in each trench were measured from the height of their respective local datum points.

The method of excavation and data recording employed was a combination of the "spit" and the so-called "context" excavation. "Spit excavation" is the traditional method which is done primarily through noting the stratigraphic layers and the artifacts within them; "context excavation" on the other hand takes note not only of stratigraphic layers and artifacts but all the details concerning deposition in the past. In the latter, smaller non-artifact features within layers such as evidence of pits and mounds, and the dimensions of a layer are also recorded because they give a more complete picture of site deposition processes. The "context excavation" method has been advocated by Edward Harris (1979, 1989). The stratigraphy and archaeological materials were recorded as to location, limits, and peculiar characteristics. Stratigraphic data were gathered using photography, sketches of horizontal and vertical images of the trench, and observations on sediments. The stratigraphy of the representative trench is presented as a general profile to avoid the complexities of a convoluted matrix often accompanying reports from "context excavation." Data from artifacts and archaeological features were

likewise gathered through appropriate recording procedures. At the end of the investigation, the trenches were backfilled to ensure safety and good hygiene in the site.

Results of the Investigation

Careful study of data from the preliminary site report (Medrana et al. 2015) led to a reinterpretation of trench stratigraphies. Three layers in the stratigraphy of Trench 1 (Figure 5; Table 2) were observed up to a maximum excavated depth of 140 centimeters from the local datum point. The uppermost layer was topsoil of an olive brown and clayey silt character, with modern artifacts and animal remains characteristic of garbage dumps, or middens. It appears that intense disturbance occurred in this part of the site due to the mixing of artifacts from different periods of the 19th to 21st centuries. A bowl-stummel piece, remains of a clay tobacco pipe, was found here (Figure 8). There were also interesting bottle pieces and ceramic sherds. One bottle was identified as an old beer bottle (Figure 9) from the Sakura Beer Company, a Japanese brewery firm that was in operation from 1929 to 1943 (Ross 2007, 9). Another one was an old bottle of Royal Tru, a carbonated orange-flavored beverage that was manufactured by the Filipino-owned San Miguel Corporation from 1922 to 1981 until production was transferred to the Coca-Cola Bottlers Philippines, Inc. The logo printed on the particular Royal Tru bottle was used during the manufacturing years 1972–1982² (Figure 10). On the other hand, the sherd is from a porcelain vessel manufactured by the Societe Ceramique, a Dutch company in existence from 1863 to 1958³ (Figure 11). Below the topsoil is a layer of brown and clayey silt matrix, while the third and deepest next layer had a matrix of light olive brown clayey silt. The middle and deepest matrices were generally artifact poor.

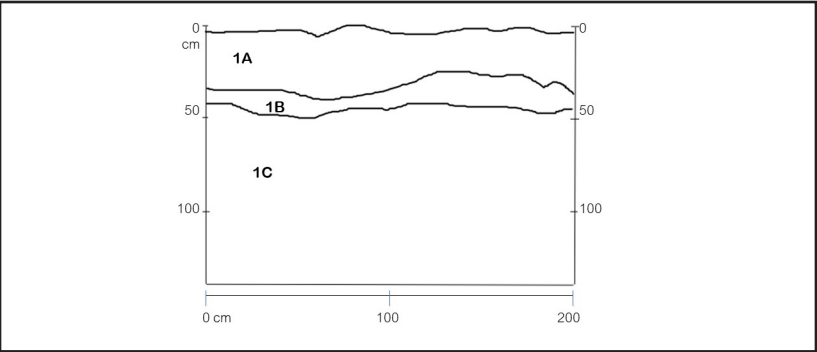


Figure 5. Vertical profile of south wall of Trench 1. (Illustration by J.G.L. Medrana)

Table 2. Trench 1 layers and characteristics

Layer	Matrix	Remarks
1A	Olive brown clayey silt	With 19th–21st century artifacts
1B	Brown clayey silt	With few artifacts of unknown date
1C	Yellow clayey silt	With few artifacts of unknown date

In Trench 2, the topsoil is dark brown clayey sand that extends up to 20 centimeters deep (Figure 6; Table 3). Beneath the topsoil is a dark olive brown clayey sand matrix containing 21st century materials, including a few earthenware and tradeware potsherds. The next layer, at 30 to 80 centimeters, was a friable, olive-colored clayey soil with charcoal mottling. Artifacts found in this layer include a sherd from an earthenware pot, and another from porcelain ware. An animal burial, with a plastic straw string attached to the animal’s neck area, appears to be associated with this layer. Underneath this was a layer of yellowish clayey silt devoid of artifacts.

The surface of Trench 3 was a dark gray sandy silt topsoil, followed below by a gray clayey silt matrix that contains charcoal, sherds of earthenware and tradeware ceramics, few metal artifacts, and few 21st century materials (Figure 7; Table 4). The third layer, characterized by a dark grayish brown clayey silt matrix still had charcoal, some porcelain sherds and metal, but an increase in potsherds of earthenware. Porcelain sherds in the second and third layers were generally from blue-and-white ceramics manufactured in Manchu-occupied China during its later imperial phases. In the fourth layer earthenware sherds, the sole artifact type, decreased in quantity. Pronounced charcoal mottling was observed in this layer.

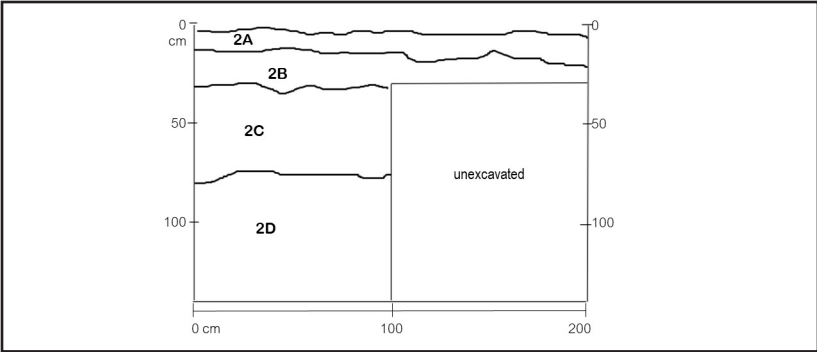


Figure 6. Vertical profile of north wall, Trench 2. (Illustration by J.G.L. Medrana)

Table 3. Trench 2 layers and characteristics

Layer	Matrix	Remarks
2A	Dark brown clayey sand	With 21st century artifacts
2B	Dark olive brown clayey sand	With 20th and 21st century artifacts
2C	Light olive brown clayey sand	With animal burial
2D	Yellowish clayey silt	No artifacts

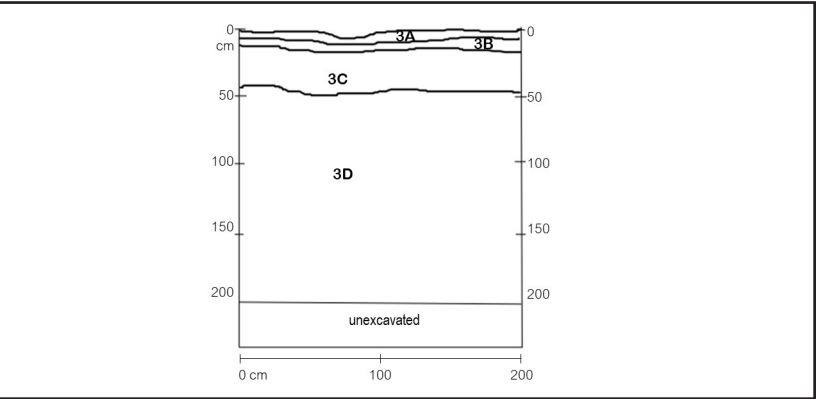


Figure 7. Vertical profile of south wall, Trench 3. (Illustration by J.G.L. Medrana)

Table 4. Trench 3 layers and characteristics

Layer	Matrix	Remarks
3A	Dark grey sandy silt	With 20th and 21st century artifacts
3B	Grey clayey silt	With 20th and 21st century artifacts
3C	Dark greyish brown clayey silt	few sherds & other artifacts
3D	Dark yellowish brown clayey silt	Significant charcoal mottling; very few earthenware sherds

All trenches may have been places of older middens as seen from the characteristics of artifacts found in them. The site’s present function as residential and midden (and even animal burial) sites would mean that occasional disturbance has been affecting the stratigraphic conditions of the area up to the present, evident in what the site survey has shown.

Trench stratigraphies reflect the use of the site since the pioneering occupation of Cuyapo in the 19th century. It is interesting to note the material types of the bottom third to fourth layers of Trench 3, as the stratigraphy could be utilized as a working model in considering the transformation of the site during its initial stages of settler use. This transformation may have happened in different areas at different times, depending on the feasibility of a place for a particular use. So far, the oldest cultural stratum for the site is reflected by the fourth (deepest) layer of Trench 3 which showed charcoal mottling and an almost absence of artifacts, which could be taken as evidence for the area’s clearing through burning. The layer above it showed a midden formed from sherds of earthenware pots, artifacts of economical and everyday utility. At this layer midden refuse was represented more by earthenware sherds than porcelain sherds. The porcelain sherds however could be suggestive of a trend towards gentrification.

Tentative dates for the layers could be produced from association of artifactual inclusions, such as our “diagnostic” early-20th-century bottles and sherds from Dutch ceramics. Blue-and-white sherds found in the three trench stratigraphies also render similar dates as they come from porcelain wares of the later phases of Manchu-occupied China.



Figure 8. Clay tobacco pipe. (Photo by R. Avellana, T. Gepte, A. Recto)



Figure 9. Bottle of Sakura Beer Company. (Photo by R. Avellana, T. Gepte, A. Recto)



Figure 10. Bottle of Royal Tru, a product of San Miguel Corporation. (Photo by R. Avellana, T. Gepte, A. Recto)



Figure 11. Sherd from a porcelain vessel manufactured by Societe Ceramique. (Photo by R. Avellana, T. Gepte, A. Recto)



Figure 12. Surface finds from the site, among them a sherd of a tin miners' bowl at upper left. (Photo by J.G.L. Medrana)

What can these initial excavations of the Cuyapo residential compound tell us?

In our excavation of the De Gracia compound within the Cuyapo *ili* (or *población*), the stratigraphic layers exposed in the 2013 season, from the most recent to the oldest, could be summarized as follows. The most recent deposits of the site are products of 21st and late 20th century activities. Occasional earth-moving during gardening, digging garbage pits and burying dead animals disturbed the stratigraphy and may have caused previously hidden objects underneath to be unearthed. The next deposits overlain by the most recent layers reflect older middens that date to the earlier decades of the 20th century, as shown by the types of artifact contained in these layers. Activities of

this time are mostly represented by earthenware and other ceramic sherds, together with bottle fragments that were being manufactured up to certain dates in the 20th century. The deepest layers reached in the season did not disclose much artifacts, although they did show other interesting tell-tale matrix features in the form of considerable frequencies of charcoal discoloration.

Migrants to Cuyapo journeyed through natural waterways, which was by sea towards Lingayen Gulf then upstream into the Agno and its tributaries. They also travelled overland along the Ilocos Coast to the Central Plains, making use of existing caravan trails which often paralleled a river channel (McLennan 1980, 158) to finally settle in villages proximal to a water body. More interior locations without big streams may have been the next priority once riverine locations were effectively settled. New arrivals from Ilocos, together with internal migrants from Rosales and Paniqui, which have been communities close to the Agno and Tarlac Rivers respectively, may have proceeded overland into Cuyapo territory in their search for more available land (McLennan 1980, 111–12). In the process new trails were possibly being created to facilitate access of the pioneers themselves and the succeeding homesteaders into the newly created villages and farmlands.

One way of interpreting the deepest layers is by referring to available historical narratives of the town. The earliest settlers who arrived in Cuyapo cleared the wilderness, and this may have been accomplished especially with the use of fire. Together with cutting down the original vegetation and tailoring the land for habitation and agriculture, the pioneers transformed chosen parts of the landscape into domesticated space. The accounts of *barrio* histories in the area, such as those of *barangay* Villaflores in Cuyapo, tell of forest felling to give way to the building of huts; this pioneering practice went on until the maturation of the *hacienda* system throughout the northern Central Plain when free land became scarcer (Tiniola 1997; Historical Data-Barrio San Vicente, Municipality of San Manuel, Tarlac, n.d.).

The next set of deposits and artifacts, overlying the deepest layers reached in 2013, could suggest the accelerated integration of Cuyapo as a nascent settlement within developments happening in the whole country and the international setting. In addition to artifacts of ordinary use, the middle layers also contain status artifacts in the form of ceramics traded and used within the wider Southeast Asian region, and from Europe as well. The occasional disturbance of the site through gardening and other forms of digging may have well caused the resurfacing of some of these artifacts. Among our surface finds were sherds of the so-called “tin miners’ bowls” (Figure 12), blue-and-white porcelain which were hand-painted with designs, that were traded in the 19th century from China to Southeast Asian

localities to cater to the needs of Chinese immigrant workers (Harrison 1995, 85–89).

The De Gracia site offers interesting points in the study of Philippine historical archaeology. Based on the results of this excavation, the relatively short span of its cultural phase which reaches to at least the 19th century could prompt archaeologists to consider the multiple, sometimes unorthodox, ways of getting information from archaeological contexts, particularly historical sites. Among these is giving due importance to surface artifacts as valid sources of information. Artifacts situated both below and above ground in the De Gracia site have equally good potentials in contributing to the historical and cultural narrative of Cuyapo. An example would be sherds of the “tin miners’ bowl,” none of which have been found with a good primary archaeological context. Despite being only surface finds, these artifacts proved helpful in putting the locality in the context of the broader Southeast Asian historical scenario. As the period of the bowl’s last known use as a functional household object are the early years of the 20th century, its appearance in the site suggests that some people in Cuyapo had access to this ceramic type that was circulating in the areas of the Chinese diaspora.

Archaeological investigation at the level of a household or set of households within a compound illuminates aspects of family life. Artifacts of the site were active participants in the life of De Gracia family members who lived in the compound, and thus artifacts situated in this particular site could ask for special interpretations which may be different from those of similar and contemporaneous ones found in other settings. Sherds of the “tin miners’ bowl,” as it appears in Malaysian contexts, for instance, could conveniently suggest a continued interaction of the diaspora with the homeland. But for such sherds to be found in Cuyapo, it could mean that the community as a social unit was already a class-stratified society not different from other major towns of the time. In addition, luxuries of the period that reached Cuyapo are told by sherds from other ceramics and glass bottles, all of foreign origin, and the remains of a clay tobacco pipe. From the archaeology of the site, the De Gracia family was part of the social segment that can be categorized as “middle class.”

Conclusion

What could our excavations then tell us about pioneering life in 19th century Philippines? In the inclusive years between the 1850s and the early 20th century, spanning approximately only two to three generations, Cuyapo had moved from a hamlet of peasants to a regular, stable town quickly developing its own gentry. This was facilitated by social, economic, and technological events such as the introduction

of intensive forms of cash crop cultivation and processing, livestock rearing in a much wider scale in the region (McLennan 1982, 66–69) and perhaps more efficient access to social, intellectual, and cultural capital.

A study of the Central Luzon diaspora is still wanting of a material culture approach to the study of peasant agency. Tenancy issues and the role of the peasantry possibly figured much in Cuyapo's history as *hacienda* landholdings encroached on the pioneers' homesteads. Hacienda Esperanza, which covered a vast area at the borders of Nueva Ecija, Pangasinan, and Tarlac, endured for several decades, its establishment antedating that of Cuyapo as a pueblo by a few years (Rodell 1992, 77–78). At this juncture however, it is sufficient to say that the gentry assumed a greater role in the historical trajectory of the town. The work by Reus, albeit partial to the author as middle class and intellectual, tells of the elite as leading the fight against the *hacienda's* takeover of lands and their roles during the Philippine-American War at the turn of the 20th century (Rodell 1990, 22–23). The archaeological record from the De Gracia site could be taken as a working model to study settler communities in Philippine historical archaeology, most especially the 19th-century phenomenon of settling the northern parts of the Central Luzon Plain and the Zambales coast. It suggests that a clearing phase was followed by occupation and eventual gentrification.

Pueblo formation in the 19th century of long Christianized Filipinos differs in certain respects to the *reduccion*-oriented community building of the 16th–17th centuries. The 19th century should be seen as a period of accelerated exchanges in the Philippines as world-wide events affected Filipinos themselves and the colonial administration. The opening of the Suez Canal between Africa and Asia shortened sea travel and promoted a faster and safer transport of passengers and commodities. The economic and social effects of technologies in communication, transport, agriculture, food security, and health care were being felt in the Philippines. These were especially noticed in social mobility. New ideologies and forms of thought in Europe began to influence Filipinos. As such Filipinos developed their own ways of living and acting within this economic and political milieu of the 19th century. A major catalyst in the creation of towns in the 1800s was the economic and social transformations happening around the globe—the trend toward more enmeshed network of exchanges, and the quest for productivity from the household to higher levels of organization—brought about by better trade routes, new commodities, technological advancement, and new forms of management. Cuyapo was a product of these transformations, borne out of pioneering communities that participated in the tensions of the tumultuous events of the 19th century in which the Cuyapo settler had been an active social agent.

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Notes

1. Reus 1952, 11; *Ereccion del Pueblos, Nueva Ecija: Expediente sobre ereccion de una nueva parroquia en el pueblo de Cuyapo independiente de su matriz Rosales 1871; Erección del Pueblos, Nueva Ecija 1837-1897; Memoria de la Provincia de Nueva Ecija: Distrito Judicial de Nueva Ecija: Estado por pueblos que determina la extensión 1884; McLennan 1980, 354-373.*
2. As of 22 February 2021, information on this is found in https://logos.fandom.com/wiki/Royal_True_Orange.

3. As of 22 February 2021, the history of Societe Ceramique, its logos, and some of its products are featured in the website of <https://www.theoldstuff.com/en/porcelain-marks/category/81-petrus-regout-maastricht>.

References

A Chronological History of Batac, Province of Ilocos Norte, Republic of the Philippines. 1953.

Historical Data Papers and Digital Collection. n.d. National Library of the Philippines. Manila.

Bautista, Angel P. 1993. "Archaeological Impact Assessment Project in Pampanga." Unpublished Manuscript. National Museum of the Philippines. Manila.

Beyer, Henry Otley. 1947. "Outline Review of Philippine Archaeology by Islands and Provinces." *The Philippine Journal of Science* 77 (3–4): 205–390.

Crawfurd, John. 1856. *A Descriptive Dictionary of the Indian Islands and Adjacent Countries*. London: Bradbury and Evans.

De Salazar, Vicente. 1903. "Dominican Missions, 1670–1700." In *The Philippine Islands, 1493–1898* XLIII, edited by Emma Helen Blair and James Alexander Robertson, 28–95. Cleveland: The Arthur H. Clark Company.

Doeppers, Daniel F. 1972. "The Development of Philippine Cities before 1900." *The Journal of Asian Studies* 31 (4): 769–92.

Erección del Pueblos, Nueva Ecija 1837–1897. Unpublished manuscript Philippine National Archives. Manila.

Erección del Pueblos, Nueva Ecija: Expediente Sobre Erección de una Nueva Parroquia en el Pueblo de Cuyapo Independiente de sus Matriz Rosales. 1871. Philippine National Archives. Manila.

Evangelista, Alfredo. 1957. "Report on an Investigation and Exploration of a Jar Burial Site in the Sitio of Butaling, Carranglan, Nueva Ecija from June 4 to 8, 1957: A Field Report." Unpublished Manuscript. National Museum of the Philippines. Manila.

Fonacier, Tomas S. 1953. "The Ilocano Movement." *Diliman Review* 1: 89–94.

Fox, Robert B. 1960. "Report on the First Month of Excavation at Porac, Pampanga." Unpublished Manuscript. National Museum of the Philippines. Manila.

Fujiki, Toshiyuki, Jun Aizawa, Michiko Imura, Masayuki Torii, Toshio Nakamura, Danikko John Rivera, Ericson B. Bariso, Arturo S. Daag, Tetsuo Kobayashi, and Mitsuru Okuno. 2013. "Preliminary Results of Pollen Analysis and Its Implications to Paleoenvironment in Paitan Lake, Nueva Ecija, Philippines." *Fukuoka University Science Report* 43: 73–81.

Harris, Edward. (1979) 1989. *Principles of Archaeological Stratigraphy*, 2nd ed. London: Academic Press Limited.

Harrison, Barbara. 1995. *Later Ceramics in South-East Asia: Sixteenth to Twentieth Centuries*. Oxford: Oxford University Press.

Hernandez, Vito. 2010. "Human Occupation of the Pampanga Coastal Lowlands (Philippines). Implications of the Effects of Post depositional Processes on Artefacts and Sediments from Lubao, Pampanga." MS thesis. University of the Philippines Diliman.

Historical and Cultural Life of the Town of Rosales. n.d. Historical Data Papers and Digital Collection. National Library of the Philippines Manila.

Historical Data of Lucaban. n.d. Historical Data Papers and Digital Collection. National Library of the Philippines. Manila.

Jose, F. Sionil. 1984. *Po-on: A Novel*. Manila: Solidaridad Publishing House, Inc.

Keesing, Felix M. 1962. *The Ethnohistory of Northern Luzon*. Stanford: Stanford University Press.

McLennan, Marshall S. 1980. *The Central Luzon Plain: Land and Society on the Inland Frontier*. Quezon City: Alemar-Phoenix Press.

McLennan, Marshall S. 1982. "Changing Human Ecology of the Central Luzon Plain: Nueva Ecija, 1705–1939." In *Philippine Social History: Global Trade and Local Transformation*, edited by Alfred W.

McCoy and Ed C. de Jesus, 57–90. Quezon City: Ateneo de Manila University Press.

Medrana, Jack G. L., Vito Hernandez, and Kathleen Tantuico. 2012. "Pilot Investigation of the Lumangbayan-Quingua Archaeological Site in Plaridel, Bulacan." Unpublished Manuscript. National Museum of the Philippines. Manila.

Medrana, Jack G. L., Joane Aldea, Reynaldo Avellana, Victor Estrella, Troy Gepte, Catherine King, Mylene Lising, D.J. Mello, Angel Recto, Dawn Satumbaga, and Sarah Agatha Villaluz. 2015. "Cuyapo: Historical Archaeology of a 19th century frontier town." Unpublished Manuscript. National Museum of the Philippines Manila.

Memoria de la Provincia de Nueva Ecija: Distrito Judicial de Nueva Ecija, Estado por Pueblo que Determina la Extensión. 1884. Philippine National Archives.

Memoria Médica Correspondiente al Año de 1883 de la Provincia de Pangasinan. Philippine National Archives.

Mendoza-Cortes, Rosario. 1974. *Pangasinan, 1572-1800.* Quezon City: University of the Philippines Press.

Neri, Lee M., Jane A. Carlos, Oscar Sebastian, Emil C. Robles, and Joel Mallari. 2004. "Balagtas Property Site, San Jose, Guagua, Panganga: Preliminary Report." Unpublished Manuscript. University of the Philippines-Archaeological Studies Program.

Newhall, Christopher G., Arturo S. Daag, F.G. Delfin, Jr., Richard P. Hoblitt, John McGeehin, John S. Pallister, Ma. Theresa M. Regalado, Meyer Rubin, Bella S. Tubianosa, Rodolfo A. Tamayo, Jr., and Jesse V. Umbal. 1996. "Eruptive History of Mount Pinatubo." In *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*, edited by Christopher G. Newhall and Raymundo S. Punongbayan, 165–95. Quezon City: Philippine Institute of Volcanology and Seismology.

Paz, Victor. 2003. "Advancing Settlement Archaeology Studies through Archaeobotany: Final Report." Unpublished Manuscript. University of the Philippines-Archaeological Studies Program.

Pawlik, Alfred F. 2002. "Acheulean in Nueva Ecija? A Report from the 2001 ASP Fieldschool in Arubo, General Tinio, Nueva Ecija, Central Luzon." *Hukay* 4 (1): 1–22.

Pecson, Potenciano. 1916. *The Canao among the Ilokos in Pangasinan.* H.O. Beyer Ethnographic Collection. NLP Digital Collection. National Library of the Philippines. Manila.

Peña, Roland E. 1998. "Petrology and Geochemistry of the Balungao Group of Volcanic Centers, Pangasinan-Nueva Ecija, Luzon" MS thesis. University of the Philippines Diliman.

Reus, Jose. 1952. *Memoria Histórica de Cuyapo (Revisada y Aumentada).* Unpublished Manuscript. Cuyapo Public Library.

Ross, Douglas E. 2007. "Identification and Dating of Japanese Glass Beverage Bottles" *Technical Briefs in Historical Archaeology* 4: 7–17.

Rodell, Paul A. 1990. "A history of Cuyapo, Nueva Ecija: The Jose Reus Manuscript." *Pilipinas* 15: 13–29.

Rodell, Paul A. 1992. "La Iglesia Filipina Independiente, 1902-1910: Social Economic History and Religious Conflict in Four Philippine Communities." PhD diss. University of New York at Buffalo.

Scott, William Henry. 1974. *The Discovery of the Igorots: Spanish Contacts with the Pagans of Northern Luzon.* Quezon City: New Day Publishers.

Scott, William Henry. 1986. *Ilocano Responses to American Aggression.* Quezon City: New Day Publishers.

Tashiro, Takashi, Mario B. Collado, Makiko Watanabe, and Wataru Morishima. "Correlation between Temporal Variations of Particle Size and Paleo-vegetation of Paitan Lake in the Central Plain of Luzon, the Philippines." *The Quaternary Research* 54 (2): 87–95.

Thomson, T.W. 1902. Letter to Dr. P. Barrows regarding the Tinggians of Nueva Ecija. San Isidro (NE). H.O. Beyer Ethnographic Collection. NLP Digital Collection. National Library of the Philippines Manila.

Tiniola, Severino P. 1997. "Barangay Profiles." Unpublished manuscript. Cuyapo Public Library. Cuyapo.

Ustariz, Bernardo. 1903. "Dominican Missions in Paniqui and Ituy." In *The Philippine Islands, 1493-1898 XLVIII*, edited by Emma Helen Blair and James Alexander Robertson, 124–37.

Historical Data – Barrio San Vicente, Municipality of San Manuel, Tarlac. Historical Data (Philippines). NLP Digital Collection. National Library of the Philippines. Manila.

Xenos, Peter. 1998. "The Ilocos Coast Since 1800: Population Pressure, the Ilocano Diaspora, and Multiphasic Response." In *Population and History: The Demographic Origins of the Modern Philippines*, edited by Daniel F. Doeppers and Peter Xenos, 39–70. Quezon City: Ateneo de Manila University Press.

Yoshida, Shin'ya, Sadao Takaoka, Morishima Wataru, and Mario B. Collado. 2011. "2,500-Year Vegetation History Based on the Phytolith Record in Paitan Lake, the Central Plain of Luzon, the Philippines" *Geographical Review of Japan Series A* 84 (1): 61–73.