

Hukay is a Tagalog term that can either be the verb "to dig" or a noun, "a hole in the ground as a result of digging". It also means "an excavation" among archaeology practitioners in the Philippines. Published twice a year, **Hukay** is the refereed journal of the University of the Philippines - Archaeological Studies Program. We accept articles on the archaeology, ethnoarchaeology, palaeoenvironmental studies, and heritage of the Asia and Pacific regions.

The Editors and the Reviewers are not responsible and should not be held liable for any personal views or opinions expressed here by the contributing authors. All questions and/or reactions to such should be addressed to the author(s) concerned.

Founding Editor Victor J. Paz

Editor Grace Barretto-Tesoro

Associate Editors

Melodina Sy Cruz Ferdinand de la Paz Ma. Kathryn Ann B. Manalo Harpy Valerio

Layout and Cover Design

Melodina Sy Cruz Ma. Kathryn Ann B. Manalo Anna L. Pineda

Archaeological Studies Program Palma Hall Basement University of the Philippines, Diliman, Quezon City <u>http://www.upd.edu.ph/~asp/hukay</u>

© Archaeological Studies Program All Rights Reserved No copies can be made in part or in whole without prior written permission from the author and the publisher.

ISSN 0119-173X

On the cover: Spanish ruin in Barangay Poblacion, Opol, Misamis Oriental. Photo by Dennis Almazan.



Journal for Archaeological Research in Asia and the Pacific

Volume 16

2011



Archaeological Studies Program University of the Philippines 2011

Contents

i Foreword

- 1 A Report on the Archaeological Survey Along the Coastal Area of Misamis Oriental, Philippines Leee M. Neri
- 29 Spacing Archaeological Sites: An Application of the Geographical Information System to Philippine Archaeology *Katherine K. Esteves*
- **49 Incorporating a Tourism Agenda in Public Archaeology Work** *Jack G. L. Medrana*

BOOK REVIEWS

- 64 Timothy Clack and Marcus Brittain (Eds.). 2007. *Archaeology and the Media.* Walnut Creek: Left Coast Press, Inc. Review by Froilyn Anne Naparan
- 71 Adeli, Hojjat (Ed). 2008. *Historic Bridges: Evaluation, Preservation and Management.* New York: CRC. Review by Kathleen Tantuico
- Robin Currie and Stephen G. Hyslop. 2009. The Letter and the Scroll What Archaeology Tells Us about the Bible. Washington D.C.: National Geographic Review by Melodina Sy Cruz

Foreword

i

A few years ago, I chanced upon significant archaeological data written on paper over 50 years ago. The sheets of paper on which data were recorded were stained and brittle to the touch and I was concerned that continuous handling will do more damage to the material and with it cause the written data to be lost. The way I see it digital scanning and copying offer the best way to not only save the material from further damage by handling, but also make it readily available to scholars and researchers.

Data is important in all academic disciplines. Data is the bases of research and its interpretation can confirm or refute existing hypotheses. In the case of archaeology, the primary source of data comes from the field. A systematic exploration of a given geographic area identifies potential archaeological sites for future archaeological excavations. The sound and careful analyses of artefacts and trench features and the production of images, either by illustrations or digital photography now form the backbone of any archaeological research. It is therefore of utmost importance that relevant data are recorded properly. Proper recording demands clear textual and graphic information produced using lasting recording/writing medium on equally durable material. The records must then be stored in a manner in which makes retrieval manageable. Computer technology and software has not only made data storage and retrieval easier they also made it possible to access the data remotely. In addition, data can also be played with to examine correlations among variables. Surprising patterns may appear. Another way to store data is by publishing. Published material can be accessed by many and stored in many ways: it can be scanned and distributed digitally, photocopied, kept in universities and personal or private libraries. In this volume, one article reports on the new data from archaeological explorations and another article discusses the creation of a digital database that makes data storage and retrieval efficient.

Leee M. Neri's A Report on the Archaeological Survey Along the Coastal Area of Misamis Oriental, Mindanao describes the latest archaeological sites discovered in Mindanao. Although preliminary in nature and the archaeological data come mostly from surface finds including stone ruins, Neri suggests probable reasons for the presence of particular types of artefacts and their distribution across the northern coastal area of Mindanao. Nevertheless, it is a good research initiative in an area which has been generally overlooked and future systematic excavations can substantiate or refute Neri's hypotheses.

Katherine K. Esteves' **Spacing Archaeological** Sites: An Application of the Geographical Information System to Philippine Archaeology proposes how to digitise archaeological data using GIS technology. Esteves' article shows how a proper data management tool can generate significant relationships between variables and enhance our understanding of archaeological sites. Esteves' proposition is for the National Museum of the Philippines, an institution which has a long history of accumulating data from the field. Best of all her proposal can also be adopted by other organisations to guard against the loss of data. Conversely, her proposal can also be adopted by other organisations to guard against the loss of data. The software used here is one that is already invaluable to the archaeological community. However, Esteves did not include in her article an institution's financial resources and necessary skills in order to use this programme. Nevertheless, she manages to point out the need for at least one institution to upgrade their database.

A vibrant archaeological community is not afraid to share data, more so because we know that other people may have different ways of interpreting them.

Grace Barretto-Tesoro Hukay Editor

A Report on the Archaeological Survey Along the Coastal Area of Misamis Oriental, Philippines¹

Leee M. Neri²

Abstract

This article is the result of the initial archaeological reconnaissance conducted along the coast of Misamis Oriental in the island of Mindanao, Philippines. The team was able to identify possible archaeological sites based on the presence of artefacts and stone ruins. Based on the conventional and prevailing way of archaeological identification in the Philippines, these identified sites are classified as open sites, cave sites, and historical sites. Foreign ceramics were used to establish the relative dates of the archaeological sites in the different municipalities in Misamis Oriental. Forty-one archaeological sites were identified along the coast of Misamis Oriental: 25 open sites, 12 historical sites, and 4 cave sites. This initial archaeological investigation will help generate information on the history of the area and may serve as significant reference for future archaeological research in Mindanao.

Introduction

Previous archaeological studies conducted in Misamis Oriental in the municipalities of Tagoloan (Cuevas and Bautista 1991), Jasaan (Peralta

Hukay Volume 16, pp. 1-27

¹ Editor's note: Earlier versions of the different sections of this paper came out in various publications (Neri and Ragragio 2008; Neri *et al.* 2008, 2009, 2010a, 2010b). The current format consolidates all the archaeological explorations conducted in Northern Misamis Oriental by the author.

²University Research Associate, Archaeological Studies Program, University of the Philippines, Diliman. Email: leee_anthony.neri@up.edu.ph

1968), Villanueva (Cabanilla 1970), and Laguindingan (Dizon *et al.* 1991) in northern Mindanao were cursory. To date, there was no extensive archaeological report on the northern part of Misamis Oriental. The dearth of reports on Misamis Oriental may be due to its geographic location, political security, and less interest from the archaeological community.

The general objective of this research is to identify archaeological sites along the coast of Misamis Oriental. These identified sites will be named after the owners of the properties or the geopolitical location. This conventional procedure is done for easy access in the future. Identified archaeological sites were assigned National Museum codes for the province of Misamis Oriental.

This study will also establish relative dates of the sites based primarily on the foreign ceramics and other cultural materials recovered. The chronology used in this article is based on Fox's (1970) and Evangelista's (1962) proposal: Palaeolithic (250,000–5,000 BC), Neolithic (5000–500 BC), Metal Age (500 BC–850 AD), Protohistoric (850–1521 AD), and Spanish Period (1521–1900AD).

The land surveys along the coastal area of Misamis Oriental were conducted in 2007 until 2010. The team explored the following areas: Cities of Cagayan de Oro (capital of the province), El Salvador, and Gingoog, and the municipalities of Lugait, Manticao, Naawan, Initao, Libertad, Gitagum, Laguindingan, Alubijid, Opol, Tagoloan, Villanueva, Jasaan, Balingasag, Lagonglong, Salay, Binuangan, Sugbongcogon, Kinoguitan, Balingoan, Talisayan, Medina, and Magsaysay (Figure 1).

The following section describes the sites and the artefacts recovered.

Manticao

The municipality of Manticao is located on the east of Iligan City and has a distance of 60 kms west from Cagayan de Oro City. Only one open site has been identified and was named Bungtod Open Site (National Museum code: X-2007-O3). The Bungtod Open Site is a hill, made of Dolomite, with an elevation of 113 metres above sea level (masl). It is located in Purok I, Barangay Camanga, Manticao. The area is privately owned by Captain Arleen Taduran of Barangay Camanga. According to her, part of the hill was quarried during the early 1980s and they found human skeleton associated with tradeware ceramics and a

2



Figure 1. Map of Misamis Oriental showing different municipalities and cities and the distribution of archaeological sites recorded from 2007 to 2010.

stoneware placed on top of the skull. The skeleton was found beside the *Iba* tree (*Averrhoabilimbi L. Oxalidaceae*). According to folklore, Taduran added, *Iba* trees were used as burial markers in the past by the Higaunon. The Higaunon, also known as the "people of the mountain," is one of the ethnolinguistic groups that mostly occupy the mountainous regions of northern Mindanao.

The team recovered 93 artefacts such as earthenware sherds, porcelain sherds, and stoneware sherds. Some of these earthenware sherds have stamped and incised designs (Figure 2). Identified tradeware ceramics were associated with the Kitchen Qing (18th to 20th centuries CE) and Vietnamese wares (14th-16th centuries CE) (Figure 3).



Figure 2. Earthenware with incised design.

Figure 3. Annamese ware found in Bungtod Open Site.

Initao

4

Two open sites have been identified by the team in the municipality of Initao in Barangay Poblacion: *Gamay na Ilihan* (small natural fortress) and *Dako na Ilihan* (big natural fortress).

Mr. Willy Tan and Atty. Jose Amarga are private owners of the *Gamay na Ilihan Open Site* (X-2007-P3). The site is a hill located beside the Initao River. It has a vantage point of Iligan Bay on the north and *Dako na Ilihan* on the south. The team found earthenware sherds, tradeware sherds and animal teeth. These were found at the ploughed area, which was planted with corn (*Zea mays L. Poaceae*) at the time of the survey. Aside from this, a Spanish ruin was also identified by the team found at *Gamay na Ilihan* Open Site (Figure 4). Ms. Luzano, our local informant, believed that the ruin was a wall fortress constructed during the Spanish period. However, based on its geological location and the rectangular remnants of its structure, it could have been used as a watchtower during the Spanish occupation (Neri *et al.* 2009).



Figure 4. Spanish structure found at Gamay na Ilihan Site.

Report on the Archaeological Survey Along the Coastal Area of Misamis Oriental

Dako na Ilihan Open Site (X-2007-Z3) is also a hill, which is part of limestone formation (Figure 5). The site has a vantage point of both *Gamay na Ilihan* and Iligan Bay on the north. This is privately owned by Mayor Enerito J. Acain. We recovered earthenware sherds, stoneware sherds, and chert and obsidian flakes found scattered along the surface of the hill (Figure 6). Some tradeware may be associated to the Late Qing period and Vietnamese wares.



Figure 5. Dako na Ilihan Open Site.

Figure 6. Obsidian flakes found at *Dako na Ilihan.*

We also surveyed the terrestrial municipal park in Initao called Initao-Libertad Protected Landscape and Seascape which covers 57 hectares. We explored four caves: Splitnose Bat Cave, Liza Cave, Open Cave, and Swift Cave. Aside from plastic wrappers and graffiti on the walls, no ancient cultural materials were found inside the caves.

Gitagum

Two open sites have been identified in the municipality of Gitagum. These sites are located beside the Cagayan – Iligan National Road. In the Cagubcub Open Site (X-2007-F4) located in Barangay Matangad, we found stoneware sherds, earthenware sherds, a metal fragment, and chert on the surface cultivated and planted with corn (*Zea mays L. Poaceae*). The area is privately owned by Mr. Perfecto Cagubcub . The second site is located in Barangay Pangayawan named as Uy Open Site (X-2007-G4). We found earthenware sherds, stoneware sherds, porcelain sherds, and chert flakes.

Laguindingan

The municipality of Laguindingan was already surveyed by archaeologists from the National Museum of the Philippines in 1991

(Dizon *et al.* 1991). The archaeological survey was conducted to assess the feasibility of the proposed Cagayan de Oro – Iligan International Airport. The project involves an archaeological reconnaissance survey of the proposed runway area and its contiguous vicinities. During the assessment, the team recovered earthenware sherds and porcelain sherds. These sherds were associated with glass fragments of contemporary beer bottles. The major archaeological site that was identified by the researchers was the remains of a *Moog* (fort) located at Sulauan point. The wall has an average thickness of 75 cm with a maximum height of 2 m and has an area of 8.9 m x 8.4 m (Dizon *et al.* 1991). The area was believed to be constructed in the 18th century during the Spanish period.

The team went to Sitio Punta Sulauan, Barangay Moog to investigate the ruins. According to Javellana (1997:4), *moog* was considered as "any tower, rocky outcropping, or natural pinnacle that could be fortified, to which evacuees retreated for defense." The name of the ruins is locally known as *Cuta sa Punta Sulauan* (X-2007-U4) and is owned by the Ayala Corporation. The ruins were constructed on top of the limestone cliff overlooking the Macajalar and Iligan Bays (Figure 7). The structure was made of dressed coral stones bonded with mortar. It has a rectangular formation and the remains of the walls have an average thickness of 70–80 cms with a maximum height of 2–2.5 m. The area has a dimension of 9 m x 5.5 m. A huge and deep treasure hunter's pit was observed at the side of the southern lateral wall. A new "parola" or lighthouse, which was constructed in 2002, is located on the western side of the ruins. No artefacts were found during the survey.



Figure 7. Cuta sa Punta Sulauan Ruins.

Analysis of the ruins *Cuta sa Punta Sulauan* shows that it was used as a watchtower during the Spanish period because of its ideal location at the northern tip of the peninsula overlooking both sides of the bays. However, its structural dimension is small thus impossible to accommodate a huge number of people in case of Moro attacks. Its function as a watchtower was mentioned likewise by Javellana (1997), Bautista (1995), and Madigan (1995).

Aside from the ruins, three caves were also explored. These caves are Liyang Bahu Cave and Langob Cave in Barangay Tubajon and La Cueva Con Agua in Barangay Mauswagon. No archaeological materials were found.

Alubijid

The municipality of Alubijid is 25 kms west from Cagayan de Oro and 67 kms east from Iligan City. The word Alubijid comes from alubijid tree or alubihod (*Spondias pinnata* (L.f.) Kurz Anacardiaceae). It was believed that alubihod was commonly found at coastal area, which is presently Barangay Baybay. Legend mentions Alubijid trees used as markers for traders as a landing site for their transactions.

The team documented a *horno* (X-2007-H4), a local term for kiln, found in Barangay Poblacion (Figure 8). According to the archives, this kiln was built by a Jesuit brother named Juan Costa, who was responsible in training brick makers in northern Mindanao (Arcilla 2000). According to the locals, the *horno* in Alubijid was used during the Spanish period for firing bricks which were then exported to Bohol for the purpose of building a church, possibly the Baclayon Church (Neri *et al* 2008).



Figure 8. Kiln found at Alubijid.

El Salvador

The city of El Salvador has a distance of 18 kms west of Cagayan de Oro. El Salvador is bounded by Macajalar Bay in the north, by the municipality of Opol in the east, by the municipality of Manticao in the south, and by the municipality of Alubijid on the west.

Liyang Cave Site (X-2007-J4) in Sitio Nilintian beside the Molugan River in Barangay Amoros is located inside the property of Mr. Jake Abesamis (Figure 9). The mouth is 1.2 m high and 6 m wide. It has a geographic coordinates of 8°31'17" north latitude 124°32'33" east longitude with an elevation of 50 masl. Earthenware sherds were found inside and at the entrance of the cave. Possible hammer stones were also found inside the cave. No tradeware ceramics were recovered.

Aside from the cave, two Spanish ruins were also archaeologically investigated. These are located in St. Joseph Academy in Barangay Poblacion and Pinoragit Hill in Barangay Molugan. Stone ruins were found inside the premises of St. Joseph Academy School in Barangay Poblacion (Figure 10). The area is located adjacent to the Macajalar Bay with geographic coordinates of 8°33'46" north latitude and 124°31'22" east longitude. The ruin is only visible on the ground level forming a long rectangular formation. The construction material is corals. The team calls the site St. Joseph Academy Ruins (X-2007-I4). The area was probably used as a church during the Spanish period because of its structural dimension and formation (Neri *et al* 2008). No cultural materials were found.

The second ruins is on Pinoragit/Paragit Hill in Porok 13, Sitio Bagyangon, Barangay Molugan (Figure 11). It is located on top of a



Figure 9. Mouth of the Liyang Cave.

Figure 10. Ruins located inside the St. Joseph Aacademy, El Salvador.



Figure 11. Spanish ruins found at Barangay Molugan, El Salvador.

limestone formation overlooking Macajalar Bay. The site is situated beside the Amoros River. The site has geographic coordinates of 8°31'50" north latitude and 124°33'12" east longitude with an average elevation of 31 masl. The materials were made of dressed coral stones bound with lime forming a rectangular structure. The hill is privately owned by Mr. Gaudencio Piit. According to the locals, the areas was known as *Karaang Lungsod*, thus the site was recorded as *Karaang Lungsod Ruins* (X-2010-Y). Earthenware sherds, stoneware sherds, and porcelain sherds were recovered. Majority of the porcelain sherds were Kitchen Qing.

Opol

The municipality of Opol is the first municipal town of Misamis Oriental in the western side of Cagayan de Oro City. Opol is 11 kms from Cagayan de Oro City.

Daayata Open Site (X-2007-N3) was identified by the team in Barangay Bacogboc, Opol. This is privately owned by Mr. Primo Daayata and is 20 kms south from Barangay Poblacion. The site is located beside the Bongcalalan Creek. A variety of artefacts such as earthenware sherds, obsidian and chert falkes, and stone adzes were found on the hill. No foreign ceramics were found. Another open site has been identified as Chert Hill (X-2008-V) (ASP 2009) where earthenware sherds and chert flakes were found scattered.

The team also surveyed two caves in Barangay Bacogboc. These caves are locally known as Salvan and Bacogboc. No archaeological

materials were found except for a stone mortar found adjacent at the mouth of the Salvan Cave (Figure 12).

Like in El Salvador, two stone ruins were recorded in the municipality of Opol. The first is located in Barangay Poblacion situated beside the Our Lady of Consolation Parish (Poblacion Ruins). The second is located in Barangay Luyong Bonbon (Molugan Ruins).

The Poblacion Ruins(X-2007-K3) exhibits vivid structural design with both lateral walls still present (Figure 13). The ruins has a rectangular formation and made of corals. The site has been excavated by the University of the Philippines – Archaeological Studies Program (UP-ASP) in 2008 (ASP 2009). It has a single nave formation measuring 60 m x 22.5 m composed of two floors supported by wooden beams of *Molave* (*Vitexparviflora* Juss).

The Molugan Ruins (X-2007-L4) is located on top of Molugan Hill (Figure 14). The ruin has a square formation made of corals and currently covered with vegetation and modern garbage. Initial analysis indicates



Figure 12. Stone mortar found at Salvan Cave.



Figure 13. Poblacion Ruins in Opol.



Figure 14. Ruins found at the Molugan Hill, Opol.

that the ruins were probably used as a watchtower during the Spanish Period (Neri *et al.* 2008; Neri and Ragragio 2008). Several pieces of earthenware sherds were recovered.

Cagayan de Oro

The city of Cagayan de Oro, the capital of Misamis Oriental, is located along the central coast of northern Mindanao, where Macajalar Bay borders the city on the north and on the east by the town of Tagoloan. The southern part of the city is bordered by the provinces of Bukidnon and Lanao del Sur and in the west by Opol. The present landform of the city is a result of Upper Miocene to Quaternary uplift, volcanic activities, recent erosion, and sedimentation (DENR 1999; Sajona *et al.* 2000).

Barangay Macasandig has been identified as having a large potential for archaeological investigations (Bautista 1992; Demetrio 1995; Lao 1995; Madigan 1995; Burton 1975; Cabanilla 1970; Neri 2003; Neri *et al* 2005). Barangay Macasandig is part of the Indahag limestone formation composed of Pliocene to Pleistocene sediments of both marine and terrestrial depositions (Sajona *et al* 2000; DENR 1999).

Based on the previous archaeological works in Barangay Macasandig, the team surveyed the Huluga area in search for lithic artefacts, Pleistocene faunal remains, and possibly remains of early humans. Unfortunately, only stone tools probably resembling Palaeolithic types were found (Figure 15). Aside from the stone tools, a fossilised leaf was found inside the Kagay-an Resort of Cagayan de Oro with geographic coordinates of 8°25'29" north latitude and 124°38'06" east longitude with an approximate elevation of 31 masl.



Figure 15. Stone tools found at the Huluga.

Another potential cave site was identified at Barangay Dansolihon. Local people called it Amboy Cave (X-2008-U). The mouth of the cave is approximately 4 m high and 3 m wide. The cave is owned by Mr. Pelik Bongtong. Cultural materials such as earthenware sherds, porcelain sherds, and metal fragments were found inside the cave. The porcelain sherds were associated with the early 15th to 17th centuries CE. Human skeletal remains were also found inside the cave (Figure 16). Unfortunately, the cave is heavily looted by treasure hunters and severely quarried by guano collectors.



Figure 16. Human remains found at Amboy Cave.

Tagoloan

The municipality of Tagoloan is the first municipality in the eastern side of Cagayan de Oro City. The town of Tagoloan has been thoroughly surveyed by the team but only two open sites have been identified. The first site is known as Neri Open Site (X-2007-M4) located in Barangay Sta. Ana. A tenant recovered a stoneware jar during the construction of a metre-deep septic tank in 2002. The area is open grassland and planted with some coconut trees (*Cocosnucifera L. Arecacea*).

The second site is known as Nanay Open Site (X-2007-T4) located in Barangay Natumolan. The site is a plateau and currently planted with corn (*Zea mays L. Poaceae*). Nine earthenware sherds were recovered.

It is also worth mentioning that there were identified tunnels in Tagoloan which are believed to have been used during World War II. According to the locals, these tunnels were allegedly used by the early Tagoloanons as hideouts to protect themselves from Japanese soldiers. Five identified tunnels were recorded in Barangay Natumolan, namely: U Tunnel, Tunnel #2, Skull Tunnel, Nanay Tunnel, and Nagangga Tunnel. Currently, no archaeological materials were found.

Neri

Villanueva

The municipality of Villanueva is bounded on the north by the municipality of Jasaan, on the east by the municipality of Claveria and the province of Bukidnon, on the south by the municipality of Tagoloan, and on the west by Macajalar Bay.

Based on the previous archaeological survey, Tagbalitang Cave, located in Barangay San Martin, was relatively dated between the Neolithic Period to the Metal Age because of the presence of the stone barkcloth beater associated with Metal Age pottery (Cabanilla 1970; Peralta 1968). No National Museum code has been assigned to the site, hence, the team gave X-2008-W as the site code. The Tagbalitang Cave is part of the limestone formation and the mouth of the cave is located at the slope of the hill orientated towards the east. Unfortunately, at the time of the survey, the mouth of the cave has been destroyed due to treasure hunting activities in the late 1980s. According to our informant, treasure hunters blasted the mouth of the cave in search for gold causing the mouth to collapse and thus blocking the opening. The cave is currently located inside the Municipal Materials Recovery Facility (MRF) and owned by the local government. No artefacts were recovered at the foot of the hill.

Jasaan

The Municipality of Jasaan is located on the eastern coast of Cagayan de Oro. Two stone ruins were reported to the team. These ruins are located in Sitio Cota, Barangay Aplaya. The first ruins were locally known as *Cota na Bato* (fort made of stone) (X-2008-V2) and its former name was "Baluarte" (Figure 17). This ruins are located beside the



Figure 17. Cota na Bato.

Cagayan de Oro – Butuan National Road and inside the property of Carmen Zayas. The ruins have a concave formation made of coral stones. The wall has an approximate thickness of one metre. According to Renato Valcueba, the ruins have been literally moved and transferred in 1975 during the construction and widening of the Cagayan de Oro – Butuan National Road. The local people took advantage of the displacement and the relocation of the ruins by reusing the coral stones as part of their building materials for their houses and barangay outposts. Others used it in decorating their gardens.

The second ruins are located on top of the hill overlooking Macajalar Bay with an average elevation of 52 masl. The area is locally known as *Karaang Jasaan* (Old Jasaan). It was believed that this was the original settlement of the people in Jasaan before they transferred to the present location in Barangay Poblacion (Neri *et al.* 2010a). The site is a complex Spanish structure composed of a church (single nave with courtyard), belfry, and another ruin located in the eastern side of the church. The church has a dimension of 50 m x 46 m. Its courtyard is 14 m x 15 m. The belfry has a hexagonal shape located nine metres from the northern side of the church entrance. The separate ruins found 52 m east of the church is recorded as X-Ruins. The X-Ruins has an L-formation with measuring 12 m x 9 m x 14 m.

Twelve pits were excavated by the UP - ASP in April 2010 (Neri *et al.* 2010b) (Figure 18). Preliminary investigation of the different structures revealed that the area is composed of a church with a courtyard at the main entrance, a hexagonal belfry and a convent. Majority of the artefacts recovered were earthenware sherds and tradeware sherds that may be associated to Kitchen Qing wares.



Figure 18. Excavation conducted at Karaang Jasaan Site.

Balingasag

One open site has been identified in Barangay Baliwagan, particularly at the abandoned Santa Filomena church ruins constructed in 1960 (Figure 19). The site is recorded as Filomena Open Site where a small number of earthenware sherds and tradeware sherds were recovered. It has a geographic coordinates of 8°43'13" north latitude and 124°46'98" east longitude with an elevation of 12 masl.

Salay

The team was brought to the historical site in Barangay Casulog by the municipal officers of Salay. Local people believed that the said barangay was the original settlement of the town before they were transferred to the present location. It was also believed that the area was the landing place of the first Spaniards in Salay where they erected a wooden cross symbolising their presence and the propagation of Christianity. The site is locally called *Santa Cruz de Casulog* (Holy Cross of Casulog) (Figure 20).

According to local accounts, the original cross was stolen by treasure hunters. It was then replaced with a metal cross inscribed with '1883', the year the first Spaniards arrived. The area is beside the Casulog River and approximately 50 m north from the present coast. Although no artefacts were found, the team considers this an archaeological site due to



Figure 19. Filomena Open Site.



Figure 20. Structural monument in *Sta. Cruz de* Casulog.

Neri

its historical importance and assigns a National Museum code of X-2008-Z2.

Sugbongcogon

One open site located on the plateau overlooking Macajalar Bay has been identified. The Micabalo Open Site located in Barangay Sta. Cruz was planted with corn (*Zea mays L. Poaceae*) at the time of the survey. It has geographic coordinates of 8°56'35" north latitude and 124°47'56" east longitude. Seven tradeware and earthenware sherds were recovered. A broken blue-and-white bowl may be associated to the 18th to 19th centuries CE.

Kinoguitan

The team surveyed the Sungo-Sungo Point in Barangay Poblacion. The area was part of the peninsula located beside the coast. This is owned by the Holy Child Municipal Parish. Majority of the artefacts recovered were tradeware ceramics probably dating to the 18th–19th centuries CE. Few earthenware sherds with some incised design were also found. The site is called the Holy Child Open Site (X-2008-G3). According to the local people, the remains of a Spanish ruins were found inside the vicinity of the parish. It was believed that this was part of the Spanish church constructed in the 19th century. The remains of the ruins are partly exposed.

The team also identified another open site in Barangay Salicapawan. The site is a hill locally called *Kinigitan* (X-2008-H3) (Figure 21). The team recovered tradeware sherds, stoneware sherds, and



Figure 21. Kinigitan Open Site.

16

earthenware sherds from the surface and some were recovered *in situ* exposed along the vertical profile in the area. A number of Vietnamese wares were found and some 18th–20th Chinese wares. To date, five communication towers are erected at the site.

Balingoan

Another stone ruins, made of coral stones, was identified and documented by the team. It is located in Barangay Baukbauk. The ruin has a rectangular formation measuring 23 m x 11 m (Figure 22). The team was informed that the ruins were used as a fence in the early 1940s in manufacturing abaca (Musa *sp*.) for textile. At present, a chapel of San Roque, built in 1970s, is located inside the perimeter of the ruins. The area is situated beside the beach overlooking the island of Lapinig. Tradeware ceramics associated to the late 17th to 19th centuries CE and earthenware sherds were recovered at the site. The ruin was named San Roque (X-2008 -Q3).

Blue-and-white sherds and earthenware sherds were recovered in the property of Asuncion Coralles in Barangay Lapinig, otherwise known as Coralles Open Site (X-2008-R3). Annamese wares (14th-16th centuries CE) were recovered.



Figure 22. San Roque Ruins.

Talisayan

One identified open site was recorded by the team. The site is known as Saraga Open Site (X-2008-N3) located at the base of the Sipaka Point in Barangay Poblacion. The team found earthenware sherds scattered along the said property.

Medina

Four identified open sites were recorded by the team. These sites are Capistrano Open Site (X-2008-K3), Pelaez Open Site (X-2008-L3), Pulang Yuta Open Site (X-2008-P3) in Barangay Duca and Pallugna Open Site (X-2008-M3) in Barangay Portulin. The open sites are all situated beside the coast of Gingoog Bay. Tradeware sherds, stoneware sherds, bottle fragments, and earthenware sherds were recovered from the sites. Majority of the artefacts recovered were tradeware sherds which may be dated between 18^{th} – 20^{th} centuries CE.

Gingoog City

Spanish ruins locally known as *Simbahan sa Daan Lungsod* (church at the old town) (X-2008-I3) located in Barangay Daan Lungsod was recorded by the team (Figure 23). The ruins run 100 m south from the coast and measures 29 m x 12 m. The rectangular formation is made of cut coral stones. The team found tradeware sherds, stoneware sherds, earthenware sherds, and white wares scattered inside and outside the perimeter of the ruins. Majority of the tradeware sherds belong to the late Qing period (18^{th} — 20^{th} centuries CE). Currently, the northern lateral wall is used as pigpens. Treasure hunters' pits were also observed by the team.



Figure 23. Simbahan sa Daan Lungsod.

The team also surveyed the cultivated property of the Rodriguez Family located in the same barangay. The site was planted with *kamote* (*Manihot* sp.) during the survey. We found celadon and tradeware ceramics, which date to the Kitchen Qing, and some earthenware. The site is recorded as the Rodriguez Open Site (X-2008-J3).

18

Material Culture

The survey generated 965 pieces of artefacts from 41 identified archaeological sites in the province of Misamis Oriental. These artefacts were randomly collected from the surface. The analyses of the porcelain sherds were based on morphology, colour, and design. The results show that the ceramic sherds found are Kitchen Qing wares, Annamese wares, Swatow ceramics, and late Ming to Qing ceramics.

Kitchen Qing porcelain materials are predominantly represented in sites identified in the coastal area in Misamis Oriental. This type of ware was mass-produced in China particularly in the provincial kiln in Fujian and Guangdong in the 18th to 20th centuries CE (Willets and Lim 1981). These ceramics were intentionally produced for the general public in China and used extensively for their daily household activities. These wares were also exported outside China to its neighbouring countries in Southeast Asia, including the Philippines (Figure 24). Kitchen Qing porcelains are commonly found in sites identified in the municipalities of Gitagum, Jasaan, Opol, Medina, Manticao, and Gingoog City.

The second most common tradeware ceramic type that was recovered in northern Misamis came from Annam in Northern Vietnam, therefore, referred to as Annamese ware (Figure 25). These Vietnamese



Figure 24. Kitchen Qing ware found in Jasaan.



Figure 25. Annamese found in Gamay na Ilihan, Initao.

ceramics, which have been dated to 14th-16th centuries CE, were exported to different parts of the Philippines (Gotuaco *et al.* 1997). Annamese wares were found in the municipalities of Jasaan, Initao, Manticao, Balingoan, and Kinoguitan.

Porcelain materials that may be attributed to the Late Ming to Qing Dynasties dating from the 16th to late 19th centuries CE and some Swatow ceramics produced in Zhangzhou kiln (Qingzheng 2002) were also recovered in the area (Figure 26). These types of ceramics were widely exported in Europe and Asia including the Philippines (Qingzheng 2002; Tan 2007). In northern Misamis Oriental, these ceramics were recovered from open sites: Ilihan in Initao, Holy Child Open Site in Kinoguitan, *Karaang Jasaan* in Jasaan, and Amboy Cave Site in Cagayan de Oro.



Figure 26. Swatow wares from *llihan na Dako* Open Site (top left), from Holy Child Open Site (top right), and from *Karaang Jasaan* (bottom).

Discussion

The dates of the different sites in northern Mindanao were based on the recovered tradeware ceramics found. The initial analysis of the archaeological materials from identified sites located near and along the bay shows a relatively young archaeology, probably dating to the 16th–20th centuries CE. In fact, the presence of the Spanish ruins and the archival documents when the Spaniards first arrived in Misamis Oriental in the 17th century would support this time period (Bernad 1996, 2004; Demetrio 1995; Fidel de Blas de la Asunción 1910). This also suggests that the identified sites located along the coast in municipalities Gitagum, Laguindingan, Alubijid, Tagoloan, Balingasag, Salay, Sugbongcogon, Talisayan, Medina, and Gingoog City were already inhabited as early as the 16th century CE. Based on the local history of the different municipalities, it was also in this period that people started to migrate from neighboring islands like Bohol, Cebu, and Camiguin to resettle along the coast of Mindanao (Demetrio 1995).

Identified sites found further inland exhibits older archaeology probably dating between 14th to 16th centuries CE based on the artefacts. This suggests that the sites located in the Bungtod Open Site in Manticao, Ilihan in Initao, Corrales Open Site in Balingoan, and Kinigitan Hill in Kinoguitan were probably occupied as early as the 14th century CE. All of these sites are located inland overlooking the sea, except for the site in Manticao. They are also all situated on hilltops.

Archaeological sites identified in Opol (Daayata Open Site), and El Salvador (Liyang Cave) and Cagayan de Oro (Huluga Complex) may exhibit a very early time period, probably dating from Palaeolithic to Metal Age Periods. No imported porcelain wares were found except in the Huluga Complex from which the area has been continuously occupied until the present. The identified sites are located farther inland and located along the river bank. They are also situated on top of hills. These hills are part of the karstic topography of the area. The limestone formation is composed of Pliocene to Pleistocene sediments of both marine and terrestrial depositions (DENR 1999; Sajona et al. 2000:175). Currently, the Huluga complex, which is a multi-component site, is the oldest site in northern Mindanao based on the stone tools that were recovered from the site. Other materials found in previous explorations were stone adzes, obsidian flake tools, Neolithic type of earthenware, and porcelain materials that may be attributed to as early as the Song Dynasty (Bautista 1992; Burton 1975; Cabanilla 1970; Neri 2003, 2005; Neri et al. 2005).

The survey of northern Misamis Oriental suggests that areas located at the coastal area are younger compared to inland sites which are older. This suggests that sites located inland were first inhabited. Two possible explanations may be inferred: cultural aspect and the geological morphology.

The presence of the Spaniards in northern Mindanao had a major impact to the socio-political situation of the area. The Spanish missionaries were first sent to inland communities to propagate and convert natives to Christianity. In return, the converted natives were promised protection and security against Moro invasion (Arcilla 2000). As early as the 16th century, Moro raiding was very extensive and threatening in Mindanao (Javellana 1997). The raiding for slaves and the confiscation of resources like weapons, valuable items, and hoarded agricultural products were the primary reasons for warfare in different communities in the Philippines (Junker 1999). The extensive raiding for slaves and the conflict between the Moros and Christians, including the converted natives, was also documented in 18th to 19th centuries CE in all coastal areas in Mindanao (Warren 2002). In fact, folklore of the different towns in Misamis Oriental suggests this kind of activities (CLUP of Municipality of Lugait 2000; Socio-Economic Profile of Alubijid 2002; Socio-Economic Profile of Manticao 2006; Municipal Profile of the Municipality of Libertad 2007; ASP 2009; Neri et al. 2009). Because of this threat, the Spaniards may relocate the inland communities along the coast for easy access for military assistance from nearby towns. This may probably explain why all identified Spanish ruins in northern Mindanao are situated along the seaside.

The second probable explanation why archaeological sites found inland exhibit early time period may be due to the geological morphology of the area. This may indicate that the early coastal area may not be the same as today. The shoreline may be further inland or few kilometers from the present coast probably in the 16th to 17th century CE (Siringan et al. 1998). Northern Mindanao is traversed by several rivers draining towards Macajalar and Gingoog Bays. The rapid sedimentation towards the coast brought by these rivers may have produced a rapid advancement of the shoreline and eventually forming a new stretch of land (Siringan et al. 1998). The present site of the San Augustine Cathedral, which is the central town of Cagayan de Oro, is currently 5kms south from the coast. In the middle of the 17th century, its coastline was 100m south from the said church (Siringan et al. 1998). This fast geological sedimentation and the extension of land towards the coast probably played a major role in the archaeology of the area. This may be one of the reasons why artefacts recovered at or near the present coast of Misamis Oriental exhibit a later time period. This may also suggest that if we will look for older archaeology in Misamis Oriental, it should be further

Summary and Recommendation

The team recorded 41 archaeological sites along the coast of Misamis Oriental (see Figure 1). Twenty-five of these are open sites, twelve historical sites, and four cave sites. Majority of these 25 open sites situated on top of hills. Most of the artefacts collected came from cultivated matrix.

The identified stone ruins were Spanish period sites. The Spanish ruins identified in the municipalities of Laguindingan, Initao, and Molugan Ruins in Opol were probably used as watchtowers based on the size of the structure and its architectural design. The rest were likely ruins of churches that also probably functioned as fortresses for defense. Extensive study must be conducted in order to confirm this.

Of the caves explored in Misamis Oriental, only three caves yielded cultural materials. These are Amboy Cave in Cagayan de Oro, Liyang Cave in El Salvador, and Salvan Cave in Opol. All of these caves have high potential for older deposits that needs further investigation. The Tagbalitang Cave in the municipality of Villanueva is also worth mentioning because of its Neolithic finds by previous researchers (Cabanilla 1970; Peralta 1968). Its contiguous areas are worth excavating for further understanding of the site.

The relative dating of the different archaeological sites of northern Mindanao is primarily based on the recovered tradeware ceramics and the presence of the identified Spanish ruins in the area. To date, no scientific dating has been done on any of the materials. This article is a preliminary study in search of archaeological sites in the northern part of Misamis Oriental.

No cultural materials and stone ruins were found in the municipalities of Lugait, Naawan, Libertad, Lagonglong, Binuangan, and Magsaysay. It is recommended that inland areas be surveyed in the future.

Acknowledgements

This archaeological research project would not have been possible without the support of the Office of the Vice Chancellor for Research Development (OVCRD) of the University of the Philippines, Diliman and the Spanish Program for Cultural Cooperation (SPCC). I would like to thank my archaeological team: Dr. Victor J. Paz, Anna Jane B. Carlos, Andrea Malaya M. Ragragio, Emil Charles R. Robles, Anna L. Pineda, Cyril Calugay, and Jessica Peña. They hugely contributed to the success of this project. I am also grateful to Ms. Cynthia Valdes and Mr. Roger K. Davis for analysing the tradeware ceramics found in northern Mindanao.

I greatly appreciate the support and endorsement of the governor of Misamis Oriental, Hon. Oscar S. Moreno. Thank you so much for your kind assistance in making this project successful. This archaeological research will not also be possible without the outmost help and support of the municipal and city mayors and their respective staff. Thank you so much for your trust and cooperation in conducting the archaeological survey in your area. I am also thankful to our informants and the local people who shared valuable information and who guided the team in search for archaeological sites.

I would also like to thank Ms. Mabel Nacasas and her family for their help and information given to the team. We greatly appreciate their enthusiasm and energy in doing surveys in the municipality of Opol and El Salvador City. It is also worth mentioning the kind support provided by the Cagayan de Oro Historical and Cultural Commission of Cagayan de Oro City. Lastly, but not the least, to the people of the Archaeological Studies Program (ASP) and the National Museum of the Philippines for their kind support in this project.

References

- Archaeological Studies Program (ASP). 2009. Cagayan de Oro River Valley Archaeological Project. Unpublished Manuscript. Archaeological Studies Program. University of the Philippines, Diliman.
- Arcilla, J. S. 2000. *Jesuits Missionary from Mindanao*. Diliman, Quezon City: University of the Philippines Press, Vol. 4.
- Bautista, A. 1992. Report on the Archaeological Exploration in Cagayan de Oro and Vicinities. *Field Report*. National Museum. Manila, Philippines.
- Bernad (S. J.), M. A. 1996. The Beginnings of Evangelization and the First Church in Mindanao 1596-1597. *Kinaadman 18*(4):253-268.

- Bernad (S. J.), M. A. 2004. The Great Island: Studies in the Exploration and Evangelization of Mindanao. Cagayan de Oro City: Ateneo de Manila University Press, Volume XVIII No. 4. pp. 253-268.
- Burton, L. 1975. Progress Report: Exploration of Huluga Sites, Taguanao Region, Cagayan de Oro, Misamis Oriental. *Field Report*. National Museum. Manila, Philippines.
- Cabanilla, I. 1970. Xavier University-National Museum Research Cooperation.*Field Report*. National Museum. Manila, Philippines.
- Comprehensive Land Use Plan (CLUP). 2000. Municipality of Lugait, Misamis Oriental.
- Cuevas, M. and A. Bautista. 1991. Misamis Oriental Archaeological Survey Project. *Field Report*. National Museum. Manila, Philippines.
- Fidel de Blas de la Asunción, G. 1910. Labor Evangelican de los Padres Agustinos Recoletos en las islas Filipinas Expuesta en Cuadros Estadisticos de la Provincia de S. Nicolas de Tolentino. Zaragoza. Acrhivo Recoleto de Filipinas, Quezon City.
- Department of Environmental and Natural Resources (DENR). 1999. *Cagayan River Watershed Profile*. Department of Environment and Natural Resources (DENR). Region X, Cagayan de Oro City, Philippines.
- Demetrio, F. 1995. "The Village: Early Cagayan de Oro in Legend and History," in *The Local Historical Sources of Northern Mindanao*. Edited by F. Demetrio S. J., pp. 39-132.Cagayan de Oro: Legacy Sales and Printing Press Inc.
- Dizon, E., M. Cuevas, and M. Aguilera, Jr. 1991. Archaeological and Historical Survey, Assessment and Evaluation of the Proposed Cagayan de Oro–Iligan Airport in Laguindingan, Misamis Oriental. Field Report. National Museum. Manila, Philippines.
- Evangelista, A. E. 1962. Philippines Report. Asian Perspectives VI (12): 46-47.
- Fox, R. 1970. The Tabon Caves.A rchaeological Explorations and Excavations on Palawan Islands, Philippines. *Monograph of the National Museum*, No. 1. Manila, Philippines.
- Gotuaco, L., R. Tan, and A. Diem. 1997. *Chinese and Vietnamese Blue and White Wares Found in the Philippines.* Makati, Philippines: Bookmark Inc.

- Junker, L. L. 1999. *Raiding, Trading, and Feasting*. Honolulu: University of Hawaii Press.
- Lao, M. M. 1995. "Cagayan de Oro, 1622-1901," in *The Local Historical Sources of Northern Mindanao*. Edited by F. Demetrio S. J., pp. 306-421. Cagayan de Oro: Legacy Sales and Printing Press Inc.
- Madigan, F. 1995. "The Early History of Cagayan de Oro," in *The Local Historical Sources of Northern Mindanao*. Edited by F. Demetrio S. J., pp. 1-38.Cagayan de Oro: Legacy Sales and Printing Press Inc.
- Municipal Profile of the Municipality of Libertad. 2007. Municipality of Libertad, Misamis Oriental.
- Neri, L. M. 2003. *Obsidian Sourcing at Huluga Open Site: An Evidence of Exchange?* Master's Thesis. University of the Philippines, Diliman.
- Neri, L. M. 2005. Obsidian from the Huluga Open Site and its Implications. *Hukay* 7:55-67.
- Neri, L. M. and A. M. Ragragio. 2008. The Archaeology of Opol, Misamis Oriental. *Test Pit* 12:20-22.
- Neri, L. M., V. J. Paz, J. Cayron, J. Belmonte, E. Robles, A. Ragragio, M. Eusebio, V. Hernandez, and A. J. Carlos. 2005. 2004 Archaeology of Cagayan de Oro City. *Hukay* 7:1-39
- Neri, L. M., V. J. Paz, A. M. Ragragio, A. J. Carlos, and E. C. Robles. 2008. The Archaeology of the Coastal Area of Northern Mindanao, Philippines. *Proceedings of the Society of Philippine Archaeology*. Katipunan Arkeologist ng Pilipinas, Inc. (KAPI). Vol. 6:78-86.
- Neri, L. M., A. M. Ragragio, E. C. R. Robles, and A. J. Carlos. 2009. The Archaeology of Initao, Misamis Oriental. *Philippine Quarterly of Culture & Society* 37:173-187.
- Neri, L. M., A. L. Pineda, C. Calugay, and J. Peña. 2010a. Archaeological Survey in the Municipality of Jasaan: Prospects and Findings. *Test Pit* 15:3-6.
- Neri, L. M., A. M. Ragragio, M. E. Wright, A. P. R. Roa, A. S. B. Mijares, and T. K. Tandog. 2010b. *The Archaeology of Karaang Jasaan*. Unpublished Manuscript, Archaeological Report. Diliman, Quezon City: Archaeological Studies Program–University of the Philippines.

- Peralta, Jesus T. 1968. *Preliminary Report on the Cagayan de Oro Seminar and Field Survey*. Field Report. Manila, Philippines: National Museum of the Philippines.
- Sajona, F. G., R. C. Maury, M. Pubellier, J. Leterrier, H. Bellon, and J. Cotton. 2000. Magmatic Source Enrichment by Slab-Derived Melts in a Young Post-Collision Setting, Central Mindanao (Philippines). *Lithos* 54:173-206.
- Siringan, F. P., R. D. Berdin, J. S. Doruelo, C. B. Jaraula, Z. R. Mateo, and Y. Y. Yacat. 1998. Sedimentation Patterns and Sedimentation Dispersal Along the Coast of Macajalar Bay: Establishing Environmental Baselines and Predictive Tools for Coastal Resource management Using the Sediment Record. Terminal Report. Unpublished Manuscript. Diliman, Quezon City: National Institute of Geological Sciences (NIGS)–University of the Philippine.
- Socio-Economic Profile of Alubijid. 2002. Municipality of Alubijid, Misamis Oriental.
- Socio-Economic Profile of Manticao. 2006. Municipality of Manticao, Misamis Oriental.
- Warren, J. F. 2002. Iranun and Balangingi: Globalization, Maritime Raiding, and the Birth of Ethnicity. New Day Publisher, USA.
- Willetts, W. Y. and S. P. Lim. 1981. Nonya Ware and Kitchen Ch'ing: Ceremonial and domestic pottery of the 19th-20th centuries commonly found in Malaysia. Petaling Jaya, Selangor: Southeast Asian Ceramics Society, West Malaysian Chapter.
Spacing Archaeological Sites: An Application of the Geographical Information System to Philippine Archaeology

Katherine K. Esteves¹

Abstract

This paper is a critical review of the National Museum's current archaeological data management system. It explored the use of a Geographic Information System, specifically ArcView 3.3, for archaeological data management. This is a pressing concern due to the continuous growth in the number of materials and information on Philippine archaeology. The study took advantage of the current site list database of the National Museum which runs in Microsoft Access. These records were used to create a GIS-based site distribution map and an analysis of sites in Cagayan Valley. GIS proved to be better equipped to handle archaeological data. A site distribution map enables spatial analysis and reveals patterns that may lead to a deeper understanding of a community or system which is impossible to detect if information is displayed only in tabular form, just like in the case of the National Museum's database. The assessment also revealed gaps and inconsistencies in the data logged by researchers. The model opened new avenues and opportunities for further research utilising spatial patterning and analysis. Recommendations on additional site information that must be recorded by researchers were made to improve the number and quality of analysis that may be done.

Hukay Volume 16, pp. 29-48

¹Assistant Professor, Faculty of Education, University of the Philippines Open University; MA Archaeology, Archaeological Studies Program, University of the Philippines, Diliman

Email: kesteves@upou.edu.ph

Introduction

This article will focus on the results of the GIS based distribution map of archaeological sites in Luzon that was created using the National Museum's site list database. The distribution map is one of the many possible applications of GIS to Philippine Archaeology. This article will discuss the gaps of the National Museum of the Philippines' existing database, highlight the advantages of GIS in handling spatial data, and list recommendations for further GIS related efforts of the National Museum. Through this comprehensive assessment of the Museum's site list database, this article can be a good reference for future computerbased initiatives by the Museum. It will also set the foundation for future GIS based endeavours both by the National Museum and the UP Archaeological Studies Program by producing a working model with archaeological sites plotted on geo-referenced maps of Luzon.

The law through Republic Act 4846 mandates the protection and preservation of Philippine cultural properties, which include the archaeological heritage. The archaeological heritage is the record of our people's culture and is a source of history, inspiration and knowledge. As such, their protection and preservation are embodied in the Philippine Constitution, which mandates the government to adequately protect and manage these important aspects of the cultural resources (Ronquillo 1992). The National Museum's Archaeology Division, through its Records Section, is continuously thinking of innovative ways to manage all of its archaeological data and has done a good job of digitising a number of its paper-based records and putting it in a database.

Extensive literature exists about the advantages of GIS in archaeological work, both for data management and spatial analysis. Aldenderfer and Maschner's "Anthropology, Space, and Geographic Information Systems" (1996), is a seminal work featuring articles on how GIS has been embraced by archaeology as a tool for recording, data management and analysis. The technology has become an invaluable tool in the archaeological research process and has been used extensively in the western world. On the other hand, the Philippines has yet to fully maximise its use (Mijares 2003). GIS has been gaining popularity in archaeology worldwide. Yet, there have been limited resources documenting how it has been used by the National Museum and the results of the experience.

This assessment identified two problems to be addressed.

Spacing Archaeological Sites

Archaeological sites and related data continue to grow in number making data management an immediate concern for Philippine archaeologists. There is a need for an efficient system that can store, display and facilitate easy retrieval and sharing of spatial data. To date, the National Museum has a database of its archaeological sites with selected attributes running in Microsoft Access® (Figure 1). It has limitations for a database in an archaeological environment mainly for two reasons. First, it will not scale to the needs of archaeological research. Archaeological research is a collaborative effort of the different disciplines whose data include maps from geography, soil and topography attributes from geology, and even satellite images. Second, archaeology deals with information that consists of spatial and temporal dimensions best represented through maps. Microsoft Access® is not equipped to handle this.



Figure 1. National Museum's Site List Database runs on Microsoft Access®. A search on an archaeological site will reveal information such as accession code, site class, cultural chronology, address, province and collectors.

The second problem is a result of the first, that is, by using a system that cannot handle and display spatial information, a lot of opportunities for spatial analysis are missed. The information that is currently recorded can offer much more to research if displayed from another format such as maps. The layering capabilities of GIS through thematic maps can offer new insights vis-à-vis looking at information independently or in a tabular form.

GIS and Archaeology

GIS stands for Geographic Information System, "a sophisticated database management system designed for the acquisition, manipulation, visualisation, management, and display of spatially referenced (or geographic) data" (Aldenderfer and Maschner 1996:4). It is an "integrated and integrating technology that provides a suit of tools that help understand spatial information" (Conolly and Lake 2006:11). It is computer dependent and has three important components—hardware, software and people. It can process inquiries and statistical analysis, as well as provide visualisation of spatial data (Sebillo *et al.* 2003). "Trends, patterns, and relationships are so easily visualised, particularly when data are presented in map form" (Kvamme 1999:154). Its uses are so varied but Kvamme (1989, cited in Aldenderfer and Maschner 1996) subsumes these under five broad themes – regional data management, management of remotely sensed data, regional environmental analysis, simulation and locational modeling.

The Spatial Database

The spatial database is one of the GIS subsystems wherein data is organised into layers. GIS uses the concept of "thematic mapping" where a collection of thematic maps describe a certain aspect of the area being studied. The location of an object and its other attributes are recorded distinctly. How does a spatial database differ from a traditional database? The difference lies in the structure. While a spatial database and a traditional map may contain the same information, traditional maps present all information in one sheet. It is usually a complex visualisation as opposed to a spatial database which shows "a set of specific thematic layers" (Wheatley and Gillings 2002:25). Take for example the traditional map. It holds so much information in one flat sheet, which may or may not be needed for the research at hand. It is also static with no provision for the additional of new data. Thematic mapping layers the different information which may be turned on or off as needed during the research process (Figure 2).



Figure 2. If a traditional map of Geologic timescale were to be interpreted using a spatial database, each timescale will correspond to one layer or theme (some call it coverage or image). During the research process, each layer may be turned on or off as needed.

Spacing Archaeological Sites

Once the GIS layers are ready, it is possible to determine spatial relationships within multiple layers and it is easy to determine patterns that would otherwise be difficult to detect if the data were presented in tables. By combining different map layers, a new map can be produced "providing potential insight into relationships between elements on different themes" (Conolly and Lake 2006:17).

How archaeologists can benefit from the technology

GIS can help archaeologists:

- 1. Organise existing data, promote data consistency, and facilitate accurate data entry and data collection.
- 2. Integrate different data formats into one central data store.
- 3. Provide easy access to data sources and user-friendly mapping tools for team members.
- 4. Explore distributions and densities of specific artefact, feature, and architectural types.
- 5. Analyse artefact groups and their relationships to possible activity.
- 6. Document and manage environmental impacts and modern-day threats to the site.

GIS provides a dynamic and flexible environment where archaeologists can "integrate, express, analyse and explore the full range of data, both spatial and attribute" (Wheatley and Gillings 2002:18) (Figure 3).



Figure 3. A suggested structure for the current applications of GIS within archaeology. (after Wheatley and Gillings 2002, Fig. 2.1)

Methodology

Designing the Geographic Information System

There is a great deal of analysis involved in designing a system. For Howard and MacEachren (1996), system design goes through three levels of analysis—conceptual, operational and implementation. Koussoulakou and Stylianidis (1999), used GIS to visualise archaeological finds and came up with a set of guide questions for the three levels, in the context of archaeological research. This paper follows the structure of the said design with additional guide questions.

The process starts at the conceptual level where the goals are defined and guide questions are prepared to identify the needs of the user. At the operational level, processes are identified based on the goals listed. For the implementation level, the user interface is taken into consideration and how the user will interact with the system (Koussoulakou and Stylianidis 1999).

Questions addressed at the Conceptual Level: Needs Analysis

1. Who will use the system?

The system was developed primarily for the archaeologists and researchers of the National Museum. It is expected to assist them as they study various patterns of site distribution in space and time.

2. What need/s is/are met by the system?

The system will primarily provide the National Museum with a site distribution map of the Luzon area to aid them in their various researches on patterns of spatial distribution of archaeological sites. It will provide the museum with a good data management system that is appropriate for the discipline by having the capacity to handle several forms of data that is usually produced by archaeological research like maps, illustrations, photographs, satellite images, statistical data and the like. Since the system is GIS based, combining the different themes available can produce new maps that can inspire new research agendas. It can aid in survey and prospecting by providing a visual of site distribution, making it possible to come up with inferences on the presence or absence of archaeological sites in an area. The system will also provide the National Museum with geo-referenced digital maps depicting different natural variables like soil type, slope, distance to water, among others, for future GIS projects.

34

3. What should be the result of working with the system?

It should facilitate the understanding of a site's structure and offer interpretations on the distribution of sites in Luzon. The system should also simplify the retrieval of data. It will provide the museum with a repository of archaeological data that can visualise the spatio-temporal attributes of the sites through maps. It can be used as a tool for survey and prospecting, by studying the distribution map produced by the system to come up with inferences on the presence or absence of sites.

4. How are the needs of the users met by the system?

The system enables the recording of the coordinates of the sites, querying, easy retrieval of data and cartographic visualisations.

Operational Level: These are the system's functions or the operations that can be carried out for spatial data, the temporal attributes of the sites and the thematic attributes of the sites. These operations should help achieve the goals in the conceptual level.

- 1. Spatial Data
 - Query and display the location of an object/site by visualising the point in a map
 - Query and display information such as accession number, site name, address, collector, cultural chronology, site characteristics and site class
- 2. Temporal Attributes of the Site
 - Query and display the site's cultural chronology (e.g. Palaeolithic, Neolithic, Metal Age, Contact Period)
 - Thematic Attributes of the Site
- 3. Hide/unhide thematic maps composed mostly of natural variables (slope, river system, soil, land cover, and others)
 - Query and display the characteristics of every natural variable
 - Implementation Level: The User Interface lists everything that the user will see and experience to be able to use the system and view the information.

Data Collection and Generation

After setting the directions of the research through the questions listed above, data for the system was collected. The main data for the GIS were obtained from the current "Site List" database of the National Museum, running on Microsoft Access. The records were extracted and saved as an excel file, to simplify the viewing and copying of needed records. Only the excavated and surveyed archaeological sites in the Luzon area were extracted. The locations of these sites and areas were checked to make sure that they are recorded with an address up to the barangay level. Those whose addresses are not enough to be plotted on the barangay map, or could not be found in the list were double checked in <u>www.fallingrain.com</u>, an online database of all places in the world, with their corresponding longitude and latitude, or with the records section of the National Museum.

The main concern of this assessment is the visualisation of the sites' distribution. Sites with known municipality at the least were included and placed on the map. Aside from the location of every site, other information that are important for archaeological research were extracted for the GIS, like the cultural chronology, name of collectors, site characteristics, and others.

To fill-in the missing Cultural Chronology for some Cagayan sites, the area whose data will be sampled for further analysis, the report of Dr. Armand B. Mijares, a former National Museum researcher and faculty of the University of the Philippines—Archaeological Studies Program who conducted several excavations in the area was made as reference. Gaps in the records of the Lal-lo Cagayan sites were researched from "Unearthing Prehistory: The Archaeology of Northeastern Luzon, Philippine Islands" (2007). The report of Ronquillo and Santiago (1977) of the National Museum on the caves of Peñablanca offered detailed information on the description of almost all listed sites in Peñablanca, Cagayan.

The sources of the natural variables which constituted most of the different themes included detailed maps of soil, river systems, roads, land cover, slope, and geology of the entire study area. The 1:50,000 map of every province, digitised up to the barangay level, constituted the other themes. The entire topographic map of Cagayan, the area identified by this assessment for modeling was scanned and geo-referenced as another theme.

Almost all of the digital maps were provided by the organisation AnthroWatch. Topography maps of the Cagayan Region were purchased from the National Mapping and Resource Information Authority (NAMRIA).

Development of the Prototype

All the available digital maps were geo-referenced and set-up with Luzon 1911 as datum since most of the map series published by NAMRIA use the Luzon datum. As soon as all the digital maps have been added as themes in ArcView 3.3, every archaeological site and surveyed area was plotted on the map, based on its barangay address. Sites with only the municipality recorded were plotted at the center of the whole municipality.

ArcView 3.3 was used for the prototype despite the newer version which was ArcGIS because the author had no access to a licensed version of the latter and the prototype did not demand the power and functionalities of a more advanced version. AnthroWatch (an NGO), generously lent the author a licensed ArcView 3.3 and its capabilities served the purpose of the intended output. No other database was created to record the artefacts. The prototype was only concerned in plotting the archaeological sites.

Each site appears as a point on the map with links to other information (Figure 4). Every site has a provision for the following information, with the last five as additional fields to the original National Museum database:

Accession Number Site Name Address Cultural Chronology Collectors Site Class



Figure 4. Each site appears as a point on the map with links to other information such as accession number, site name, address, and cultural chronology, among others.

Esteves

Site Characteristics Surveyed or Excavated Artefacts Images Site Report

The final output is a distribution map of the sites in Luzon (Figure 5). Aside from a site distribution map per province, maps were combined to show a regional site distribution map (Figures 6 and 7).

To demonstrate one research possibility with the distribution map, the sites in the Cagayan region were selected to compare site and non-site locations. Cagayan is a good sample because of the high occurrences of excavated and surveyed sites. There are more than 200 recorded sites in the area.



Figure 5. Site distribution map of Luzon, Philippines.



Figure 6. Site distribution map of Region Two, Cagayan Valley, Philippines.

38



Figure 7. GIS makes it easy to visualise the distribution of archaeological sites in an area such as the clusters of sites in the Cagayan Valley Region. The spatial database revealed four clusters of sites in the region – Claveria, Abulug, Lal-lo and Peñablanca.

The analysis consisted basically of a synthesis of the conditions of sites per cultural chronology based on the following variables—soil type and slope. Proximity to water was another consideration but was not included anymore since all the sites in the study were near a water source, specifically the Cagayan River.

Discussion

GIS for Data Management of Philippine Archaeological Records

The Philippine archaeological record consists of data on the material and cultural remains of past cultures multiplied by the area of the entire country. Owing to the fact that culture history is made up of different factors one can just imagine the layers and layers of data that have to be stored and organised for future archaeological research.

This assessment is a pioneering effort to use Geographical Information System to manage archaeological data from the National Museum. Archaeological record-keeping involves different set of tools and methodology because of the nature of archaeological data. It is not enough to simply be able to store and retrieve information from a database. Archaeological data has a spatial dimension, which opens up various possibilities in research and offers more information if made accessible. It is also a multi-disciplinary field, where collaborations from different disciplines are often needed for a more accurate interpretation of data. This collaboration means that different data in different forms from different disciplines have to be accommodated in the recordkeeping.

The system created for this assessment displays information that are available from the current National Museum Access database but is scalable to accommodate future records. Fields for more site related data in the future can be easily added into the system. The records that can be displayed at the moment are very basic but adequate enough to lay the foundation for a good data management system. The researcher can query and retrieve the following information provided by the National Museum records: Accession Number, Site Name, Site Address, Cultural Chronology, Collectors, and Site Class. It can also accommodate images such as satellite maps and it is possible to link to .pdf and .doc files for full reports.

Aside from the usual list and information in tabular form the output of the whole data management system takes the form of a distribution map, which is another important tool in archaeology. The system visualises, through maps, the distribution of sites across Luzon, providing opportunities for spatial analysis. Layers of different natural variables (topography, soil type, soil, river system, etc.), visualised through maps provide additional information in the analysis of archaeological sites.

Gaps and Recommendations

With the limitation of available data from the Access database of the National Museum, the result of the GIS-based list of archaeological sites in Luzon did not fully satisfy two important tasks in archaeological recordkeeping (1) recording context and (2) providing redundancy (Peregrine 2001). By the end of the excavation the entire context of an artefact has been destroyed. Thus, information about its context is never enough to aid future researchers. This problem may be addressed by linking more reports to every site in the future and adding more database fields with information that may help recreate the context of every site and artefact. Field researchers should diligently fill-out all the information required in the survey and excavation forms. Site reports, which are one of the important sources of information for the data management system, should be thoroughly prepared with as much detail. In the current system, the following fields were added, even if there are no data to populate it yet.

1. Site Characteristics – This is a short description of the site

- 2. Longitude and Latitude These are the exact coordinates of the site.
- 3. Link to an image This can be a link to a photo of the site or an important / unique artefact.
- 4. Link to Site Report For a complete report about the site, nothing beats the original site report which can be linked as a .pdf file or .doc file.
- 5. Excavated or Surveyed only In the Access database of the National Museum, sites were not tagged if they were surveyed or surveyed and eventually excavated. List of unexcavated sites could prove useful since these areas have high potential of yielding artefacts. There might be plans of excavating them in the future.
- 6. Elevation The elevation is especially important for caves. Paperbased contour maps of the National Museum will have to be consulted individually to extract this information.
- 7. Survey forms, inventory of excavated sites, site excavation report and other paper-based records should be reviewed to extract this information.

It should also be noted that full names of the collectors or researchers should be recorded in the system to avoid confusion in the future. The current National Museum Database lists only the surnames. It will also add to the efficiency of the system, wherein users who know only the first name of the collector can still do a relevant search.

Redundancy in the recording of important information will be achieved as layers upon layers of data are added to the system through the years. At this point, more information should be extracted from the site reports. As early as this initial attempt, the quality and relevance of data recorded should already be noted. The more relevant data are added to the system, the more depth in the analysis may be expected. The goal of every data management effort in archaeology is to record the most information possible so that other archaeologists may reconstruct the area excavated.

The Distribution Map of Luzon

Distribution maps plot against a given space or map the exact position of sites or artefacts thus allowing visual and statistical analyses to be performed. As basic as it may seem, distribution maps carry with it a wealth of information about an archaeological data in relation to its space or to other sites and/or artefacts surrounding it. Despite the early awareness that location is integral in archaeological research spatial studies in archaeology was never systematised until recently. Instead, archaeologists borrowed methods from other disciplines such as botany, geography, ecology and economics, to analyse data derived from their distribution maps. Several efforts on spatial analysis start off with a distribution map.

The distribution map produced by this assessment is a visualisation of the positions of the different sites in Luzon against a standard map and other relevant variables visualised through maps. Since some of the sites have incomplete addresses and there were no GPS coordinates in the source database, some sites were plotted based on their municipality. This means that all sites are in their correct municipalities at the least, but not accurately plotted in their exact point in the municipality. Nevertheless, at a scale of at least 1:50,000, this visualisation method is good enough to demonstrate existence of archaeological patterns and clusters. Some of the spatial analyses that may be applied in this map in the future are point pattern analysis, regression analysis, trend surface analysis and spatial autocorrelation.

Discerning patterns of association among distributions is not as simple as it seems. Aside from the visual approach to data, there is also the statistical approach. Objective statistical tests are usually employed to "detect and verify the existence of patterns". Archaeologists also rely on statistics to objectively measure the strength of these relationships. Sometimes the concern is not whether there is a pattern, but the strength of these patterns. Visualisation and quantitative analysis of spatial data are, therefore, complementary.

What is the relevance of these patterns and clusters in archaeology? There are two types of distribution maps – one, it can show the distribution of archaeological sites and second, the distribution of artefacts on a given space. In this assessment, the output is a distribution map of archaeological sites in the Luzon area. Some observations that can be explored are: If they are clustered in an area what are the characteristics of that area that make sites abound there? Is it influenced by natural conditions or is it mere coincidence that survey and excavations have been arbitrarily made there? If proven to be influenced by natural factors, are these factors also present in other areas? Sites may also be present in other areas with similar conditions.

Gaps and Recommendations

The major difficulties in the creation of the distribution map were

Spacing Archaeological Sites

the incomplete recording of address names for some sites and unrecorded GPS coordinates. With the accessibility of mapping technologies such as Google Earth, it is now possible to precisely plot the areas of the archaeological sites with minimal effort and can then be imported to GIS. This can be done for sites without coordinates to complete the records. For future excavations, the Museum should look into the strict recording of GPS coordinates for the areas being surveyed or excavated. This is all the more accurate than street and barangay names.

The Different Themes

The power and complexity of results that can be produced by a GIS depend on the available themes that represent different natural and cultural variables important for analysis. The more variables, the more analysis can be made. In this research, only natural variables were added due to the limitation of available data. Nevertheless, the output is already a good prototype for it presented a lot of the information sitting on the database of the National Museum in another perspective (Figure 8).



Figure 8. With the "Luzon Slope" theme visible, researchers can see the level of slope where a site is located. Luzon slopes are classified as Hilly to Mountainous, Level to Undulating, Rolling to Hilly, Undulating to Rolling and Very Steep.

The different themes in this research can offer some of the following information relevant to archaeological research:

- Topography shows contour of an area; Van Leussen (1993) in Kvamme (1999) notes that "characteristics of terrain probably influenced the size and shape of territories".
- Slope as slope increases, it becomes more difficult to traverse; the degree of steepness significantly affects the possibility of human

occupation and the reasons for such choice of terrain

- River Systems boundaries may have been 'attracted' to natural features like rivers and ridge lines; since rivers are a source of water, nearby areas may be archaeologically sensitive
- Soil soil conditions can show potential of area for agriculture; it can also dictate the speed and degree of decay of materials in contact with it;
- Geology it contextualises the site in terms of the geologic time scale; it can determine the types of rocks that abound in the area; for Palaeolithic sites with stone tools, this information is important.

Gaps and Recommendations

This research relied on the digitised maps available from AnthroWatch. The National Museum, though complete in their site maps, still rely on paper-based maps. For the Cagayan Region, it was difficult to procure even paper-based topographic maps from NAMRIA. Some sheets were out of stock. It would benefit the National Museum if they can digitise and geo-reference different maps for future use. Natural variables which can be visualised through maps include geomorphology, ecological border distance, topography, hydrology and geology. Since human behavior has been identified to be patterned with respect to its natural and social environments efforts should be given to producing themes based on cultural and social variables also. Cultural variables may include subsistence systems, migration path, transportation systems and previous settlements. These maps will be challenging to develop but can be a work in progress as more information are gathered from different researches.

The quality and accuracy of the different maps are also a concern. Maps from NAMRIA from which most of the digitised and georeferenced maps were based, are mostly a result of survey and recording way back in the 1950s. The ideal set-up is to have a collection of different versions of a map. Recent satellite imageries are now very easy to download with practically no cost. Having these images in the databank is practical for comparisons especially with the meandering movement of rivers.

Conclusion

In this study, an attempt was made to examine the possible applications of Geographical Information System in Philippine Archaeology by using it as a data management system, eventually

44

Spacing Archaeological Sites

producing a distribution map of archaeological sites in Luzon. A case study of the Cagayan Province sites was further explored to come up with a simple prospecting guide for probable archaeologically sensitive areas in Cagayan and to visualise the trends and clustering of sites in the area.

GIS has become a standard tool in archaeology and has contributed much in the advancement of the field. GIS will do its work of opening up possibilities and opportunities for spatial analysis, but it will demand an equal effort from archaeologists to provide quality data. It will require some changes in the way Philippine archaeologists collect, record and manage their data. First and foremost is the importance of always recording a site's coordinates on the map.

In line with this, the assessment noted some gaps in the current National Museum Access database, which has to be addressed to keep up with the current technology and to execute effective archaeological research. The following observations should be noted:

- 1. The recorded data on the individual sites are not substantial. Though there will eventually be a link to the entire site report, key information about the sites should be recorded in the database through individual fields to make the information easy to search.
- 2. Field and excavation forms should be conscientiously filled-up by every researcher since this is the primary source of data that is entered in the database.
- 3. The recording of the exact coordinates of all archaeological sites should become a standard procedure if GIS is to be used in the longterm management of archaeological data.
- 4. Guidelines should be formulated in the naming of sites to avoid subjective and vague site names.
- 5. By virtue of Executive Order 45, PRS92 was made the standard reference system for all surveying and mapping activities in the Philippines. It is now mandated that all maps should be based on this reference system. All data in the National Museum database should therefore be converted accordingly.

Some of the gaps were brought about by the changing times and technology. For instance, if noting the longitude and latitude were not crucial before the advent of GIS, now, coordinates are required if one were to use GIS in any archaeological endeavour. National Museum researchers mark sites on paper-based topographic maps and use the same map to determine the longitude and latitude not in the context of

Esteves

using it for GIS. Their methods of recording depend on the current tools available and convenient during the time of survey or excavation. Sixty years ago, researchers never thought that data would be digitised, tagged and made searchable through a database. Now, all recording should have this end in mind.

GIS proved to be an effective tool in visualising archaeological data into maps as shown by the distribution map created for Luzon. By combining the different spatial variables, relationships or associations can be identified by the researcher, which might stimulate questions for future research, and studies as demonstrated by the prospecting tool for Cagayan. "GIS would greatly enhance the ability to analyse relationships such as co-occurrence and proximity within acquired data. The GIS would also allow the creation of valuable derived information, products that represent a synthesis of multiple factors" (McGwire *et al.* 1996:98).

This study also created a good model for further GIS efforts by the National Museum. It can scale to the needs of archaeological research in terms of the types of data that can be integrated and the themes and tables for most of the provinces in Luzon have already been set-up.

The most important realisation in this whole exercise is that the quality and accuracy of data recorded will dictate the quality of analysis that can be conducted and the extent of analysis that can be made. The result of any study is only as good as the data available. Thus, there is a need for a collective conscious effort to gather and record archaeological data from the field conscientiously. For the long-term use of GIS, different natural and cultural variables should be continuously digitised to enable deeper understanding of sites.

As all powerful computer applications, GIS is only a tool for research and the site distribution model that was created along with the article is not the end itself. It is a tool to further discover the history and culture of people and places. A GIS is dynamic and certain layers of data are added as new research reveals new information. The end all objective for creating a GIS is not coming up with the system but learning more about the world that we live in.

Acknowledgements

The author is indebted to the following for this study – all the people behind the Records Division of the National Museum of the Philippines, Professor Abe Padilla of AnthroWatch for most of the digital maps and

Spacing Archaeological Sites

the licensed ArcView 3.3, Professor Wilfredo Ronquillo of the National Museum Archaeology Division, Professor Armand Mijares, Professor Victor Paz, Professor Jack Medrana and Professor Alfred Pawlik.

References

- Aldenderfer, M. and H. D. G. Maschner (eds.). 1996. *Anthropology,Space and Geographic Information Systems*. New York: Oxford University Press.
- Conolly, J. and M. Lake. 2006. *Geographical Information Systems in Archaeology (Cambridge Manuals in Archaeology).* New York: Cambridge University Press.
- Hodder, I. and C. Orton. 1976. *Spatial Analysis in Archaeology*. New York: Cambridge University Press.
- Howard, D. and A. M. MacEachren. 1996. Interface design for geographic visualisation: Tools for representing reliability. *Cartography & GIS* 23(2): 59-77.
- Koussoulakou, A. and E. Stylianidis. 1999. The Use of GIS for the Visual Exploration of Archaeological Spatio-Temporal Data. *Cartography and Geographic Information Science* 26(2): 152. Accessed January 16, 2009, from Questia database: <u>http://www.questia.com/PM.qst?</u> <u>a=0&d=5001894540</u>
- Kvamme, K. L. 1999. Recent Directions and Developments in Geographical Information Systems. *Journal of Archaeological Research* 7: 153-201.
- Kvamme, K. L. 2006. "There and Back Again: Revisiting Archaeological Locational Modeling," in *GIS and Archaeological Site Location Modeling*. Edited by M. W. Mehrer and K. L. Wescott, pp. 3-38. Boca Raton, FL: CRC Press, Taylor and Francis Group.
- McGwire, K., N. Chagnon, and C. B. Carías. 1996. "Empirical and Methodological Problems in Developing a GIS Database for Yanomamö Tribesmen Located in Remote Areas," in Anthropology, Space and Geographic Information Systems. Edited by M. Aldenderfer and H. D. G. Maschner, pp. 97-106. New York: Oxford University Press.
- Mijares, A. S. B. 2003. An Americanist's Archaeological Field Method and Documentation. *Hukay* 5: 50-55.
- Mijares, A. S. B. 2007. Unearthing Prehistory: The Archaeology of Northeastern

Luzon, Philippine Islands. Oxford: John and Erica Hedges Ltd.

- Peregrine, P. N. 2001. Archaeological Research: A Brief Introduction. New Jersey: Prentice-Hall.
- Ronquillo, W. P. 1992. Philippine Archaeological Heritage: A Disappearing Cultural Resource. *National Museum Papers* 3:61-66.
- Ronquillo, W. P. and R. Santiago. 1977. *Archaeological Caves and Open Sites Explorations at Peñablanca, Cagayan Province*. Manuscript. Manila: The National Museum of the Philippines.
- Sebillo, M., G. Tortora, M. Tucci, and G. Vitiello. 2003. "A Web GIS for Promoting Archaeological Assets". Paper presented at the *International Cultural Heritage Informatics Meetings*, 8-12 September 2003. Paris.
- Wheatley, D. and M. Gillings. 2002. *Spatial Technology and Archaeology: The Archaeological Applications of GIS*. London: Taylor and Francis.

Incorporating a Tourism Agenda in Public Archaeology Work

Jack G. L. Medrana¹

Abstract

Initiatives for the development of heritage tourism in a locality could be integrated in Public Archaeology. This is shown by a case study of the annual field schools of the Archaeological Studies Program of the University of the Philippines. There are at least five field schools where work of this kind has been done, namely in the Oriental Mindoro municipalities of Naujan, Bongabong, Bulalacao, and San Teodoro; and Opol, a municipality of Misamis Oriental. An archaeological project in El Nido, Palawan has also been included in this paper because it likewise has a thrust for Public Archaeology. From an examination of the work done in the field schools, it appears that a good program related to local tourism development includes an identification of stakeholders, making the development of local tourism a priority, identification of markets, and a strong sense of heritage among the cultural claimants.

Introduction

Archaeology has come of age from being a traditionally academic discipline to a field gradually being seen as having economic potential. The practical uses of archaeology to the wider society could be grouped into at least two sets. The first set is characterised by its appeal to a large audience

¹Assistant Professor. Archaeological Studies Program, University of the Philippines Diliman, Quezon City, Philippines.

Email: jglmedrana@yahoo.com

Hukay Volume 16, pp. 49-63

because of the perceived romantic, adventurous, nostalgic and mysterious elements inherent in archaeology as could be seen by portrayals of the archaeologist and the archaeological in film, television documentaries, popular magazines, and video games (Gardner 2007; Holtorf 2007a; Stern 2007). The second set of uses relate to the valuation of heritage, in which archaeological sites and materials are considered a form of cultural heritage. The latter has resulted in the creation of policies and legal instruments for the conservation of heritage, like the conduction of Archaeological Impact Assessments (AIA) in some countries, and the official recognition of certain cultural places as "heritage sites."

Conservation of a so-called "archaeological heritage" in the Philippines is encouraged by laws to protect and find more of these resources. The "Cultural Properties Preservation and Protection Act" (Republic Act 4846) with its subsequent amendments through Presidential Decree 374 has been one of the first to ensure that archaeological resources are only to be retrieved by qualified archaeologists, and only under supervision from the National Museum (Barretto 2001). This has been powerfully echoed in the recently formed Republic Act 10066 which is the "National Cultural Heritage Act of 2009" (NM, NCCA, FHFI 2010). Salvaging of these resources through the AIA meanwhile is implied in the production of an "Environmental Impact Statement" as required by Presidential Decree 1586 and its revisions, for projects in "environmentally critical" areas (Barretto 2001:30).

In the two sets that show use of archaeology to the public, it could be said that one of the major drivers of demand is consumption through tourism. Using archaeology for tourism, or what some advocates from the discipline would call archaeological tourism or archaeotourism (Archaeological Institute of America et al. n.d.:3), is a utility of archaeology that the public easily understands and is ethically acceptable. This evolving attitude towards archaeology comes as a consequence wherein cultural heritage is beginning to be treated as assets or resources and therefore is being perceived with utility (Conservation Institute 1999). Archaeological resources are finite just like most other resources, and with the issue of sustainability come the need for conservation.

The prevailing model for the significance of archaeology in a demand-driven system follows what Freeman Tilden had thought about work on heritage resources: Incorporating a Tourism Agenda in Public Archaeology Work

Tilden's central thesis – 'through interpretation, understanding; through understanding, appreciation; through appreciation, protection' – offered a resounding rationale for interpretation in the service of conservation (Bryant 2006:173).

To uphold archaeologists' values that call for the conservation of archaeological resources, the public needs to share these values and to make archaeology necessary for them in terms of education, entertainment, and/or leisure. The question of financing the sustainability of the archaeological resource could find solutions by cultivating ties with the tourism industry (McManamon 1993) to expand the public's exposure to archaeology and its applications.

Archaeologists and cultural workers lament about the ignorant attitude given by the public to cultural materials and structures. The rational economic man (or society), one would argue, would place very little importance to cultural materials if his (or its) needs are not met by these things. When there are instances of using these resources for profit, it is usually in the context of treasure- or pot-hunting, which not only is against archaeological values but also downright unsustainable.

Presenting archaeology and cultural heritage as a viable resource for tourism appears to be the most workable enterprise among local communities that makes use of archaeological and historical resources. The Philippine government's priority on tourism has resulted in the creation of tourism councils among local government units to develop the industry. It has also caused strategic planning for tourism to be always integrated in the master plans of most municipalities. It is within this setting that a possible way of incorporating archaeology and cultural heritage to help the local economy could be made. One good way of initiating this agenda is through the interface of archaeological research with community education now being done in the field schools.

Archaeology as Tourism Product

The literature on the interface of archaeology and tourism is growing. A staunchly academic discipline by tradition is facing up to the challenges of an ever-dynamic world pervaded by economic necessity and globalisation. By treating archaeology as heritage, tourism has transformed and packaged it as a product of a "heritage industry" (Tunbridge and Ashworth 1996:2).

The issues cropping up from the "commodification of heritage" in a tourism product based on archaeology are similar to the ones encountered in other kinds of cultural heritage tourism. McManus (1997) has presented a good outline of the topic using the situation of a heritage attraction in Ireland. One is the conflicting goal between conservation and selling, in which the priority of preserving a site or structure depends on its potential to generate income. This fear of conservationists regarding the reduction of "cultural" decisions into "economic" ones has been exposed by Professor David Throsby of Macquarie University as he discussed about Australian cultural heritage, saying that:

We cannot conserve everything and so choices must be made. Furthermore, resources are costly; if they are used for the maintenance and preservation of heritage they are not available for other uses, so they incur opportunity costs. The range of tangible and intangible costs that may be implicated in heritage decisions is extensive and multifaceted. (Throsby 2006:4)

However, he suggests that heritage resources should be considered not only as capital in terms of financial value, but also as "cultural capital" that carries value because of the importance ascribed to its historical, cultural, or aesthetic aspects. Likewise heritage resources have also to be seen through non-use values that could refer to:

...the asset's existence value (people value the existence of the heritage item even though they may not consume its services directly themselves); its option value (people wish to preserve the option that they or others might consume the asset's services at some future time); and its bequest value (people may wish to bequeath the asset to future generations). (Throsby 2006:6)

It appears that the conservative opinion of maintaining heritage as community identity than as tourism product (McManus 1997) is the more prevailing sentiment among archaeologists. Much noise has been created about the issue of interpretation, which in one axis involves the translation of information produced by the archaeologist and given to the consumer, and in another talks about democratising representation by giving the various cultural stakeholders their voices in the translated information. There are, for instance, concerns about the "Disney-fication" of the past, in which information about the past is being distorted and over-simplified to suit the wants of the tourist (McManus 1997:93). Although most archaeologists consider this as anathema to the discipline, some like Holtorf (2007b) see this as a strategy to engage the public in a way that makes use of effective marketing instruments existing at present.

There are calls for archaeologists to be aware not just of ideology and literary genre, but of present economic structures too that affect archaeological interpretation (Silberman 2007). Cultural stakeholders as consumers also determine interpretation, such that archaeology and the related fields of study have been talking about the concept of "multiple pasts," which according to one author (Kehoe 2007) should not be taken as failures in interpretation but should be viewed as expressions of diversity but guided by ethics.

Despite these concerns from the academe, using archaeology as tourism products have been seen in the positive light by governments of some nation-states, which use as their leverage their country image and archaeological resources for economic development while promoting national identity (Stritch 2006). At the local community level, projects creating tourism enterprises oftentimes come in the form of sustainable development programs with a sensitivity for community ownership and participation. An agenda for promoting tourism through public archaeology could thus turn archaeological sites and museums in local communities into public education tools, increase income through tourism development, provide a rationale for resource integrity and inculcate a stewardship ethic among the community (Hoffman *et al.* 2002).

Case Study: Public Archaeology initiatives of the Archaeological Studies Program (ASP)

Field schools are annually held by the Archaeological Studies Program of the University of the Philippines as a formal course that forms part of the masters degree programme of the office. For a period of around three weeks in April or May graduate students work on an archaeological site to receive training in field methods. The field school is generally academically-oriented as it is where methods and theories in the core courses of the graduate degree programme is demonstrated, but since 2004 the ASP has integrated within it a "public archaeology" component. Dr. Victor Paz, director of the ASP and team leader of its field schools from 2002 to 2008, has defined public archaeology as "the practice of archaeology with clear concerns to communicate with a living community connected geographically with the archaeological research area" (Paz 2007:55).

From the definition stated by Paz, public archaeology has revolved around enriching cultural heritage and this is true regarding the field schools during the past five years. This has solidified as one of the objectives of these annual projects, which is to "actively inform local communities about the significance and value of heritage and its management at the level of communities" (ASP 2006; 2007). Paz (2007:55-56) mentions the "base-to-top" approach as a particular framework for public archaeology where work is to commence from the community to the larger public. The public archaeology facet of the field school is a venue in which the agenda for archaeological tourism could be appropriately pursued.

ASP is tasked to advance the study of archaeology about the Philippines and Southeast Asia through research and instruction. Annually since 2004, ASP has conducted its field schools in five different sites with a public archaeology component, alongside a project in El Nido, Palawan that has been engaged with the municipal tourism office (Figure 1). The first project conducted by the ASP with a public archaeology component was done in the church ruins located at Barangay Bancuro, in Naujan, Oriental Mindoro in 2004 (Paz 2004). This was a problematic case,



Figure 1. The locations of archaeological sites in the Philippines mentioned in the article. (by the author, using blank map from <u>http://geography.about.com/library/blank/blxphilippines.htm</u>)

not only because it is the first of such projects but also due to peculiar situations happening during that time. The ruins, dating to the Spanish Occupation, were already a pilgrimage site of the Roman Catholic faithful even before the project was done, and a modern chapel, built within the old church site and where mass is held only in particular occasions, may have been one of the reasons for people to visit it. The place was identified as a potential archaeological site because of the existence of ruins and because it qualifies for being the previous main settlement of Naujan as told in old written documents.

Paz (2007) narrates the experience of the team in its excavation of the Bancuro site. An issue that proved difficult to manage was the trust of the local community to the team, which was for the most part embedded in an atmosphere of heightened political conflict as the 2004 national and local elections drew nearer. The field school, which was supported by the incumbent officials, was at the same time attacked by members of the opposition party who accused the team members of treasure hunting. Their accusations derived from the activities of a previous group that, according to people in the village, came to Bancuro for a medical mission but at nighttime went to dig among the ruins looking for treasure. Also suspicious of the ASP team were people in-charge of the chapel who similarly entertained the idea that the team could be digging for treasure instead of doing archaeological work.

The ASP team members however, managed to continue the field school, and allowed the community to watch the daily excavations as they went on. At the end they put up an exhibit that showed the results of the project, accompanied by the holding of a thanksgiving program at the site that lasted until nighttime. The exhibit consisted of several of the actual artefacts recovered from the excavation and many panel illustrations and photographs related to the excavation and archaeological site. While the exhibit materials were placed under the care and ownership of the community afterwards, the actual artefacts on display were later sent to the National Museum in Manila for storage. Surprisingly after a year when the ASP members were returning to Mindoro for another field school, the team members discovered that the exhibits were now being curated in a special room of the chapel, complete with panels and glass casing built in which to present the materials. The initiative for this came from the chapel wards, who were before suspicious of the ASP team, while labour and funds were contributed by other community members. Since then the municipal and provincial governments have introduced the

ruins at Bancuro as one of their tourist attractions, alongside Lake Naujan and other ecotourism spots.

Lessons from Bancuro were applied one year after in the next field school at the hamlet of Cuta in Barangay Anilao, Bongabong municipality of the same province (Paz 2007). The site also featured ruins of a church dating to the Spanish Occupation but was not a well-known tourist site like the Bancuro ruins. The community in Cuta was generally much supportive of the project. During the public archaeology program at the excavation's end, people were so much involved as they displayed how meaningful to them the stone structures were in terms of heritage. Aside from participating in the mass held on-site, they showed for instance how these ruins figured largely in their folklore as they lit candles and performed offerings as a way of acknowledging and giving thanks to the supernatural. Exhibits pertaining to the site and its archaeology were also put up, and afterwards were entrusted to the community. Although the place remains undeveloped as a tourist site as of this writing, the church ruins at Cuta has already been recognised as one of the cultural attractions of Bongabong.

In 2006 the field school went to the southernmost part of the province, which is the municipality of Bulalacao. We have here an archaeological site featuring the Spanish Occupation ruins of what could be an old fort or church on top of a hill located in the middle of a mangrove swamp. In this field school season we saw the active involvement of the local government in the project (ASP 2006). The archaeological project was seen as complimentary to the development plan drawn by the municipal administration of transforming the swamp area into an ecotourism destination. Officials of the municipal administration aim to convert this area into a wildlife sanctuary, with boardwalks that would bring visitors to a tour of the forest and its floral, faunal, and cultural attractions, like this archaeological site and an existing Mangyan village nearby. With the help of archaeology, they hoped to find out more about the old structures so that they could sufficiently present it to visitors. The usual public archaeology program was held in the last days of the field school, with exhibits, tour of the site, a mass, and a party in the evening. Similar to the previous seasons, the exhibits were left in the care of the municipal government.

During the 2007 field school we were working again on Spanish Occupation ruins of what seemed to be a fort situated on the beach at San Teodoro (ASP 2007), a neighboring municipality of Mindoro's most popular destination, Puerto Galera, at the island's north coast. The site is recognised as a municipal attraction, but pales much in comparison to the marketed ecotourism features such as Mount Halcon, beach resorts, and the numerous caves and waterfalls abounding in the area. It is however relatively popular among the locals as a place of pilgrimage and picturetaking venue. The ruins were reconstructed decades ago in form of a baluarte or fort, like what the community perceives it to be, and the barangay chapel was eventually relocated beside it. A statue of the Blessed Virgin Mary was placed inside it, but after an earthquake toppled the statue of the Blessed Virgin from its pedestal, it was then placed in front of the chapel where it presently stands. The year 2007 was again election season but we did not encounter challenging situations like those in Bancuro. The property owners, incumbent officials in various levels of local government, and the rest of the community were very accommodating of our project. There were instances of treasure hunting in the past several years but the trust of the community was easily formed and maintained right from the very start of the project.

From Oriental Mindoro the field school site shifted to the municipality of Opol in the province of Misamis Oriental in 2008. Close to the bustling provincial capital of Cagayan de Oro, Opol has potentials as a place of cultural heritage because of several archaeological sites identified within the municipality (Neri and Ragragio 2008). Opol's present Roman Catholic church stands beside what many believe was its precursory church building in the 19th century. There are ruins of walls outlining a perimeter of what could be the area of this old church. The municipal administration and members of the local community have demonstrated their support for the project. Although the church ruins were already included in the municipal tourism plan long before the project was conceived, there are no immediate actions yet to develop it as an attraction. What was seen in this project's public archaeology component was the invitation to the exhibit and program of people who are potentially helpful in developing the area for cultural tourism. Among these are members of the Cagayan de Oro Chamber of Commerce who told me what they think of developing the site from an entrepreneurial perspective.

Intensive archaeological work is being conducted at Ille Cave at the northern end of Palawan Island. Located in Barangay New Ibajay within the municipality of El Nido, Ille Cave is on a karst which stands on the valley of the Dewil River. Excavations at Ille Cave do not constitute part of the annual field school, but are part of a separate project covering a whole valley in El Nido that has great archaeological potential. Present archaeological excavations in the area were initiated by a collaboration between the NM, UP-ASP, Non-Government Organisations like the Philippine Rural Reconstruction Movement (PRRM), the Southeast Asian Institute of Culture and Environment, Inc. (SEAICE), and a private company, the Ten Knots Development Corporation. Since 1998, surveys and excavations conducted almost annually have provided data on human activity at Ille, with the earliest dating to at least 10,000 years BP (Before Present) and with almost every cultural phase represented up to recent times (Paz *et al.* 2009).

El Nido is the quintessential representation of Palawan. With its lagoons and reefs, islands, mangrove swamps, caves, cliffs and forests, it is a popular ecotourism and sports tourism destination in the country. Cultural tourism has only started to pick up recently with the growing interest in Ille Cave of tour operators and the local government. The municipal administration would begin creating a museum in town showcasing artefacts from Ille Cave and other archaeological sites of the municipality. It is also assuming responsibility for the site by purchasing the property in which the caves are located. The marketing of these cultural sites is gradually being seen in advertisements made by the local government and business sector. While the Tabon Cave Complex is gaining fame as cultural heritage, the Ille Cave in El Nido has just been receiving its first break. With no big clout to show yet, the archaeological site of the Ille Cave is an inevitable but far less spectacular appendage to the climb of this cave's limestone tower, which is the foremost tourist attraction of the barangay. Thus a flyer to promote tourism in the area a few years ago invites visitors to:

Explore the historical Ille Cave, a 45 minute drive away from El Nido! It has attracted the interests of various archaeologists over the last few years. Human remains were found and excavations are still going on.

For the adventurous...climbing the mountain over the cave is another challenge and (sic) [with] the panoramic view over the rice fields, karst mountains and Sharkfin Bay in the east (El Nido Tour Guides Association n.d.).

Updating the local government and community with new information about archaeological activities happening in Ille and the other surrounding caves has been purpose of the public archaeology of these excavations. This has been done through a series of dialogues, lectures, and exhibits (Paz *et al.* 2009).

Conclusion

The public archaeology component of the field school has provided a space for experiments in the development of archaeological tourism. With the primary objective of advancing cultural awareness and heritage, the "ASP brand" of public archaeology can be extended to building community-based, tourism-related work and enterprises that could provide livelihood, instill a stronger sense of heritage, and simultaneously make cultural projects sustainable.

Among the things identified from these experiences that are crucial to a good program of public archaeology related to tourism development include identification of stakeholders and a good dialogue with them. Stakeholders in this case are people who have interests in the site and/or project, which may include political actors such as officials in the different levels of public administration, political camps, and influential entities; property owners; fund givers; entrepreneurs and business owners; non-governmental organisations like heritage advocates, church groups, and cultural organisations; and other cultural claimants. The development of a tourism program in a locality only becomes possible and successful with the collaboration of the different sectors involved in the place. For instance, dialogues should also include talks with groups like the business sector which may have more effective ideas on how to develop the enterprises, or with local community residents who may have suggestions or positive and negative reactions about the project. The attitude of the community is also affected by the timing of the activity, and we can cite the conduction of the field schools in relation to important events happening, like the national and local elections.

Another thing is when tourism becomes a priority industry of the local government unit (LGU) and entrepreneurs. Localities that have some experience with the industry of tourism are likely to be keen in developing archaeological attractions. Those that are adjacent to known tourism centres also tend to capitalise on their potential resources. We can cite as examples the case of Bulalacao which have vast potential resources in the form of unspoiled beaches and islands, mountains, forests, seafood and agricultural production, and accommodating Mangyan communities. It should also be noted that boat trips are now being organised from here to the world-famous island resort of Boracay in Aklan province less than one hundred kilometres away. These make the LGU optimistic in developing the archaeology of the municipality as part of their tourism resources. The second example in our case study is El Nido. Having the most popular of Palawan's ecotourism attractions, developers of the tourist industry here are gradually including the archaeological resources of El Nido as a supplement to the destination of Bacquit Bay, its islets, and dive sites.

Identification and development of markets are important. The experiences of the ASP, for example, partly show that archaeological sites where its field schools were being conducted could satisfy the needs of different kinds of visitors. These visitors could either be pilgrims, heritage tourists, or people from the locality. Depending on the consumer type, enterprises should then invest in the necessary facilities to encourage tourism development in the area. Finally, communities that have formed a strong sense of heritage among themselves are likely to have a positive attitude for stewardship of archaeological resources, viewing them not only in terms of economic benefits but in other forms of rewards as well, like in the case of Bancuro, Cuta and San Teodoro where the sites are deeply imbued with religious importance.

Archaeology has great potentials in developing the tourism industry of the Philippines, as more actors and avenues now exist to advance archaeology in the country. Although the community of archaeologists in the country has been proactive in working for their discipline, there should also be a conscious effort in considering the needs of the various cultural stakeholders to which archaeology could readily show its application.

At present a much greater fraction of public archaeology being done in the Philippines is more of educating the community about basic information on culture and history. While this is an important aspect of archaeologists' relationship to the public, it is equally important to identify things by which the public could relate to archaeology and cultural heritage in a more "realistic" and ethical way, that which takes into consideration their resources, needs, and perspectives. By introducing them to a framework that makes their cultural resources valuable to their community in terms of both short and long term needs, people would understand that they would need to take care of these resources and guard their comparative advantage, while being part of a culture and heritage that they are proud of. Enhancing the role of the community in conserving archaeological and cultural resources the sustainable way entails capacity-building, means for preservation and effective management.

References

- Archaeological Institute of America, Archaeology Magazine and Adventure Travel Trade Association. n.d. A Guide to Best Practices for Archaeological Tourism. Accessed 25 June 2010, from <u>http://www.archaeological.org/pdfs/AIATourismGuidelines.pdf</u>
- Archaeological Studies Program. 2006. Advancing history and heritage through the study of excavated Spanish structures in Oriental Mindoro: Report on the Bulalacao Initiative. University of the Philippines, Diliman. *Unpublished report*.
- Archaeological Studies Program. 2007. Mindoro Island Archaeological Project: Report on the Archaeological Field Season of 2007, San Teodoro, Oriental Mindoro. University of the Philippines, Diliman. Unpublished report.
- Barretto, G. 2001. Preliminary review of Philippine Archaeological Impact Assessment Procedures. *Hukay* 3(2):27-40.
- Bryant, M. 2006. Tilden's Children: Interpretation in Britain's National Parks. In Hems, A. and M. Blockley (eds.). *Heritage Interpretation*. Routledge, Taylor and Francis Group. London and New York. Conservation Institute. 1999. The Economics of Heritage Conservation: A Discussion. Accessed 25 June 2010, from <u>http://www.getty.edu/conservation/publications/newsletter/14_1/</u> <u>profile1.html</u>
- El Nido Tour Guides Association n.d. Flyer for Guided Tours.
- Gardner, A. 2007. "The Past as Playground: The Ancient World in Video Game Representation," in *Archaeology and the Media*. Edited by T. Clack and M. Brittain, pp. 255-272. Walnut Creek: Left Coast Press, Inc.
- Hoffman, T. L., M. L. Kwas, and H. Silverman. March 2002. Heritage Tourism and Public Archaeology. *The SAA Archaeological Record* 2 (2):30-32, 44.
- Holtorf, C. 2007a. Archaeology is a Brand!: The Meaning of Archaeology in Contemporary Popular Culture. Oxford: Caric Press Limited.

- Holtorf, C. 2007b. Learning from Las Vegas: archaeology in the experience economy. *The SAA Archaeological Record* 7(3):6-10,25.
- Kehoe, A. B. 2007. "Archaeology within Marketing Capitalism," Archaeology and Capitalism – From Ethics to Politics. Edited by Hamilakis, Y. and P. Duke, pp. 169-178. Walnut Creek: Left Coast Press, Inc.
- McManamon, F. P. 1993. "Linking Archaeology and Tourism," in *Cultural Tourism ICOMOS.* Edited by P. L. Prematilleke, pp. 132-136. Colombo.
- McManus, R. 1997. Heritage and tourism in Ireland an unholy alliance? *Irish Geography* 30(2):90-98.
- National Museum, National Commission for Culture and the Arts, Filipino Heritage Festival Incorporated. 2010. Protecting Filipino Heritage: Laws and Initiatives for the Preservation of Cultural Properties in the Philippines. NM, NCCA, FHFI. Philippines.
- Neri, L. and A. Ragragio. 2008. The Archaeology of Opol, Misamis Oriental. *Test Pit* (12):20-21.
- Paz, V. 2006. Panimulang Ulat Tungkol sa Isang Pag-aaral Pang-Kasaysayan sa Bancuro, Nauhan, Oriental Mindoro. University of the Philippines, Diliman. *Unpublished report*.
- Paz, V. 2007. Public Archaeology in Mindoro and the Improvement of a Philippine National/Cultural Consciousness. In Saidin, M. and S. Chia (eds.). Proceedings of the International Seminar on Archaeology and Nation Building, pp. 52-65. Penang: Pusat Penyelidikan Arkeologi Malaysia and Universiti Sains Malaysia.
- Paz, V., W. Ronquillo, H. Lewis, J. Carlos, V. Hernandez, E. Robles, Y. Balbaligo, J. Ochoa, M. Lara, A. Ragragio, A. Leplongeon, and W. Solheim. 2009. *Palawan Island Palaeohistoric Research Project: Report on the 2009 El Nido Field Season*. Unpublished manuscript. Manila: University of the Philippines Archaeological Studies Program and National Museum of the Philippines.
- Silberman, N. A. 2007. "Sustainable' Heritage? Public Archaeological Interpretation and the Marketed Past," in Archaeology and Capitalism – From Ethics to Politics. Edited by Y. Hamilakis and P. Duke, pp. 179-193. Walnut Creek: Left Coast Press, Inc.
- Stern, T. 2007. "'Worldwonders' and 'Wonderworlds': A Festival of Archaeological Film," in *Archaeology and the Media*. Edited by T.

Clack and M. Brittain, pp. 201-219. Walnut Creek: Left Coast Press, Inc.

- Stritch, D. 2006. "Archaeological Tourism as a Signpost to National Identity in Cyprus – Raising Aphrodite in Cyprus," in Images, Representations and Heritage – Moving Beyond Modern Approaches to Archaeology. Edited by I. Russell, pp. 43-60. New York: Springer.
- Throsby, D. 2006, August 16. Paying for the Past: Economics, Cultural Heritage and Public Policy. Test of Joseph Fisher Lecture, delivered at the University of Adelaide. In *Macquarie University Business and Economics Website*. Accessed 25 June 2010, from <u>http://</u> <u>www.businessandeconomics.mq.edu.au/faculty_docs/news_files/</u> <u>throsby_fisher.pdf</u>.
- Tunbridge, J. E. and G. J. Ashworth. 1996. *Dissonant Heritage: The Management of the Past as a Resource in Conflict*. Chichester, UK: John Wiley and Sons.

Naparan

BOOK REVIEWS

Archaeology and the Media Edited by Timothy Clack and Marcus Brittain 2007. Walnut Creek: Left Coast Press, Inc.

Review by Froilyn Anne Naparan Graduate student Archaeological Studies Program, University of the Philippines

Very few can deny that the romantic accounts of bold archaeologists (both in fiction and in real life) discovering the remnants of ancient civilizations have fascinated the public for a long time. In fact, this rather romantic image conjured by the media and the popular audience may encourage—or perhaps merely compel—the practitioners of archaeology to interact more often with the media. Currently, archaeology is a more common subject matter in media than ever before. Similarly, the media is used more often now in archaeology than has ever been encountered in the past few decades. How archaeologists convey their research findings to a broader audience (beyond the academe) through the different forms of contemporary media and how the media depict archaeology in general may be regarded as very important considerations by the academics and/or professionals in the archaeological and media community.

The 2007 publication *Archaeology and the Media* offers a deeper perspective in the significance of this very complicated relationship. In this collection of essays, a group of internationally-acclaimed, mediasavvy archaeologists presents an analyses of the various issues involving the complex connections between archaeology and the media as the two distinct fields both benefit—and sometimes mess up—each other. They examine a wide range of archaeology-related material in different forms of media, such as television, cinema, the popular press, photography, radio and video games. The combined efforts of the scholars rest on a dominant theme: the probable long-term repercussions of the greater publicity through and dependence of archaeology upon mass media at present and in the future.

The book is divided into five parts that represented the main points involved in the discourse regarding archaeology and media. In every section, the contributors provide plenty of information that put the
relationship of the two fields in the proper context. It should be noted, however, that the chapters may have overlapping premises. Such common ground seen in the different works of the contributors may be regarded as an indication of the multifaceted nature of the subject matter at hand.

The editors Timothy Clack and Marcus Brittain properly set the mood in the introductory chapter by discussing the general issues regarding the impact of archaeology and the media on each other, such as the portrayal of the discipline and its practitioners in the media, the accuracy of details in archaeology-related stories and the oversimplification or "dumbing-down" of disseminated information. Although rather lengthy, Clack and Brittain's introduction manages to synthesise all the following chapters based on the unifying theme stated earlier.

Chapters 2 and 3 are under Part I: Archaeology's Reception of the Media. In "An Archaeological Fashion Show," Cornelius Holtorf discusses how archaeologists present themselves on television and print media through their manner of dressing. He makes it plain that archaeologists can and usually do take advantage of popular stereotypes regarding their appearance, such as the sexy adventurer (to some extent like the film icons Indiana Jones and Lara Croft), the unconventional fieldworker, the capable professional and the wise scholar. Certainly, the photographs of archaeologists wearing the stereotypical garb help to support Holtorf's line of reasoning quite well.

Peter Fowler's "Not Archaeology and the Media" basically comments on the archaeology-media relationship in terms of its relevance to society. In particular, Fowler shows deep disapproval of archaeology television programs that seem to promote treasure-hunting. To him, promoting such practices to the public goes against everything that good archaeology is supposed to be. Fowler also expresses his desire to communicate archaeology and enhance current educational programs through the use of museums. He even describes the various possibilities of using the fine arts, particularly landscape painting, as a means of communicating archaeology to the public.

Part II: Translating Archaeological Narratives consists of three chapters. For instance, "A Short History of Archaeological Communication" by Karol Kulik recounts the long and fruitful symbiosis between archaeology and the media in Britain. The chronology is divided into five "ages" in order to straightforwardly underscore the positive and negative effects of the shifts in the interdependence among archaeology, the media and the popular audience through time. In this chapter, Kulik makes an obvious effort to dispel the misconception that archaeological communication with the public is a unique or recent phenomenon. It should be noted that Kulik's history mainly discusses nonfiction media such as exhibits, radio, the press, and television.

Meanwhile, Clack and Brittain's "In the Camera's Lens: An Interview with Brian Fagan and Francis Pryor" provides valuable insights on the readiness of archaeologists to deal with various media formats. Fagan and Pryor drew on their extensive media experiences to give suggestions on the proper communication of archaeology through television and radio. The interview evidently shows the dissatisfaction of the two eminent archaeologists with the academe's fixation with specialisation and the restrictive "publish or perish" mindset that could be detrimental to the further development of generalised yet serious popular archaeological narratives intended for laypersons.

Christine Finn delves into the remarkable union of science and art in "Darkness Disseminated: Lennart Larsen's Images as Photojournalism, Pop Archaeology, and Works of Art." She focuses on the emotional aspects of the images produced by the renowned Danish photographer Lennart Larsen for the Danish archaeologist Peter Glob's 1965 *The Bog People*, a classic work regarding the people of the Northern European Iron Age. Finn expressively explores the interplay between Larsen's evocative images and Glob's moving narration that resulted in a beautiful form of archaeological storytelling that was radically different from most academic works. The chapter includes Larsen's photographs of the Tollund Man and Graubelle Man, two of the most famous naturallypreserved human bodies found in the boglands of Europe.

The two chapters under Part III: Has Media Changed Archaeology? adequately answer the question posed by the section title. The chapter "Archaeology and the German Press" by Marion Benz and Anna Katrien Liedmeier traces how journalists and editors of popular German newspapers and magazines create and publish interesting reports using information from international and local archaeology scenes. As indicated by several charts presenting the results of their study, Benz and Liedmeier's meticulous efforts reveal the journalistic perspectives that guide the selection of topics and style of writing in relation to archaeology. The two researchers say that the profuse yet

dissatisfactory reportage of archaeology in Germany could be improved if journalists and archaeologists work together to provide high-quality information derived from archaeological research. To them, this cooperation may help promote archaeology as both informative *and* entertaining to the popular audience without resorting to lurid sensationalism.

Jon Price talks about the effects of media's influence on the growth of archaeological research on the battlefield in his contribution "Great War, Great Story: A Personal View of the Media and Great War Archaeology." Although Price never intends to provide many historical details regarding the First World War, he gives emphasis to the fact that it was the first war in which modern media, particularly moving pictures, had an important role. Price recounts his personal experiences in France where he and other archaeologists collaborated with a media team in documenting the recovery and identification of the remains of Great War casualties. Price shows full awareness of the probable conflicts of interests and other ethical problems that may occur when the media funds the archaeological project for the sake of producing TV programmes to generate and cater to the upsurge in public interest. Despite such risks, however, he acknowledges that the relationship of archaeology and media will continue to flourish.

Four chapters give more attention to archaeology on television and film as indicated by Part IV: Visual Archaeology, their section title. In "Screening Biases: Archaeology, Television and the Banal," Tim Taylor draws on his extensive experiences with broadcast media to argue that the involvement of archaeology with the media is a vital mode of public service that may help justify the existence of a discipline that does not seem to have direct practicality. To Taylor, the shared interest of television and archaeology in banality or ordinariness puts forward important facets of daily life both in the past and at present. Furthermore, Taylor thinks that television and other types of media have the power to challenge humanity's prejudices regarding certain kinds of "sensational" human behavior. To support his claim, he uses cannibalism as an example of such behavior, a topic that he has studied in the academe and discussed on television.

"'Worldwonders and Wonderworlds': A Festival of Archaeological Film" by Tom Stern views some examples of 20th-century German archaeologythemed films from a cultural perspective. Stern points out some significant trends in the depiction of archaeology in the different cinema genres (e.g. instructional-scientific films, nationalistic films, sex films) and neatly places such fluctuations in proper historical context. To Stern, the outlandish and the unknown were often emphasised in many old archaeology films – as indicated by the elaborate sets and scanty costumes shown in accompanying photographs. Furthermore, he calls attention to the various archaeological film festivals in Europe because he believes these events, despite offering good publicity, that are still unacknowledged in studies involving archaeology-media relationships. In addition, Stern also examines an alternative style of filming employed by the French production company Gedeon-Produktion that shuns idealistic portrayals of archaeology.

The presentation of truth and authenticity through the manipulation of audiovisual details in archaeological documentary footage is the issue tackled by Angela Piccini's "Faking It: Why the Truth is So Important to Archaeology." Piccini takes note of the careful choreography of somewhat extraneous background elements, such as light and sound, which lends archaeological narratives on television the heightened appearance of reality and closeness so valued by the viewers. Also, Piccini finds it rather curious that the audience seem to have a preference for overtly "costumed" or dramatised reconstructions of past human livesas seen in the example Pompeii: The Last Day by BBC1. To Piccini, the viewers have more faith in such simulations than in "live" or prerecorded presenter-led archaeological stories because of their richness in audiovisual detail. This makes her realise that documentary accounts of the past (as well as other themes) require as much reconstruction as fictional representations of human life.

In "The Iconography of Exhumation: Representations of Mass Graves from the Spanish Civil War," Layla Renshaw concentrates on the dramatic visual representations of the exhumations of the graves containing the Republicans executed by Nationalist soldiers during the Spanish Civil War. Renshaw provides a short historical background that revealed some details regarding the "fratricidal" violence and its aftermath on the survivors. This archaeological project was part of a bigger social movement to commemorate the slain Republicans and increase public consciousness of the civil war (still a taboo topic in many Spanish communities) through media coverage. Renshaw points out that many media representations of the bodies and objects retrieved from the graves did not show scientific details. To her, the images became more emotionally and politically powerful and allowed the expression of the

unsayable when the burials were shown in their original disorderly state that hinted at the violence that occurred.

The final section, Part V: Archaeology, the Media and the Digital Future deals with the "new media"-namely the digital audiovisual media involving the Internet that allows fast-paced data interpretation and dissemination. In the chapter "The Past as Playground: The Ancient World in Video Game Representation," Andrew Gardner analyses how the representation of past societies that have proliferated from archaeological activities have penetrated the practice of playing video games. Gardner finds several key elements in archaeology-themed games, such as violence, survival through technological progress, lack of cultural diversity and superiority of some societies over others. Although Gardner has no intention of dwelling on the "evils" of playing video games, he expresses concern on the possibility that the distorted image of the past as seen in such games may contribute to further misrepresentation of archaeology in other types of media. Even so, he still sees video games as a potential way of educating players about the past and gave the suggestion of allowing archaeologists to provide input in game design.

The close ties between media and information design serves as the focal point of the last chapter "Digital Media, Agile Design, and the Politics of Archaeological Authorship" by Michael Shanks. He argues that the conventional design of archaeological methods tend to anticipate or predefine the types of data to be collected and examined. Shanks feels that this "top-down" approach somehow obscures the past because nobody uses new fresh strategies of interpretation. Shanks also examines the material qualities and the interconnectivity of media in the process of designing cyber-systems used for storing and retrieving data, archaeological or otherwise. Although his writing style seems rather technical because of the profusion of information technology (IT) jargon in his contribution, Shanks manages to make it clear that the materiality of all media technologies is inseparable from the act of information processing.

Without a doubt, *Archaeology and the Media* has many merits. It gives its readers a good idea about how archaeology and the media work for *and* against each other. Also, it encourages the readers to see the archaeology-media relationship as multifaceted rather than as a one-dimensional narrative. The volume also has plenty of URLs, photographs and charts that help expound the contributors' arguments—albeit these supporting materials are presented in basic black and white instead of the

glossy full colour often seen in popular archaeology books. To be sure, the plain format of the book obviously indicates its academic purpose; nevertheless, it manages to convey its profound message clearly for the experts and amateurs in both disciplines.

Yet there are also some features in this volume that need to be criticised and avoided in future works regarding the relationship of archaeology and the media. For instance, although the book itself is fairly easy to read and understand, its contributors seem to assume that their readers, academicians or otherwise, are already familiar with the terminology used in media. For example, the concept of public-service broadcasting (PSB) in Britain may seem fairly straightforward, yet its nuances may still require more explanation for readers not familiar with the media industry—especially since one cannot assume that other countries have PSB. A glossary and some appendices could have easily clarified important concepts. Adding these materials would have enabled proper use of the necessary terminology in future research about the relationship of archaeology and the media.

In addition, it is impossible to overlook the fact that the book is deeply embedded in the Western—particularly the British—context. Consciously or not, the contributors (many of them based in Europe and America) put plenty of emphasis on Western archaeology and media. They often mentioned famous archaeological personalities and programs taken from the West, such as the British archaeologist Mortimer Wheeler and the successful British television show *Time Team*. Admittedly, the media products of Western origin have a powerful, far-reaching influence that virtually surpasses the efforts of local media; also, it may not be practical to discuss the relationship of archaeology and the media with a worldwide scope in a single volume. Nevertheless, the editors and writers should have exerted more effort to include contributions or examples about the archaeology-media relationships from other parts of the world.

Furthermore, it would be helpful to include chapters that reveal the perspectives of the people in the media industry who often feature archaeology in their works yet do not belong to the academic and/or professional archaeological community. Journalists, editors, filmmakers and other media practitioners may be able to effectively explain their side—such as their reasons for using and/or misusing archaeological topics and the factors that may complicate their relationship with archaeology.

Despite all these relatively minor mishaps, Archaeology and the Media is still of great significance to all the archaeologists and media practitioners intent on educating the public about archaeology. Indeed, the book is not a manual for media practitioners on the proper representation of archaeology. Nor is it a handbook for archaeologists who want to make contributions or at least communicate with the media. Nevertheless, the text does its best to give sufficient context and background information that may help all the people concerned with making archaeology more accessible and understandable to the public through the use of media. Despite the irony that this volume is not intended for mass consumption (or rather, to be purchased by laypersons at popular bookstore chains), it still suits the purposes of the scholars and practitioners of both archaeology and the media. To sum up, the book succeeds in shedding more light on the nature of the appeal that archaeology has for the public and the influence of media on the discipline itself.

Historic Bridges: Evaluation, Preservation and Management Edited by Hojjat Adeli 2008. New York: CRC

Review by Kathleen Tantuico Graduate student Archaeological Studies Program. University of the Philippines

To date, the conservation and preservation of historic bridges are of interest to historians, engineers, architects and scholars. The Ohio State University, to which the book's editor is currently affiliated, had founded the Historic Bridges Conferences (HBCs) in 1985. This book is a compilation of papers from the 8th Historic Bridges Conference in April 2008. A collection of fourteen papers, this book is devoted to the history, preservation, restoration and management of historic bridges all over the world.

This fifteen-chapter book is divided into four parts, all pertaining to historic bridges. With the theme of History, Part 1 incorporates significant past events to explain the present state of the Mississippi Railway Crossing in Clinton, Iowa, and the Dragon Bridge of Li Chun in Ancient China. Charles Birsnstiel describes how as early as 1857, trading between European settlers from the upper Mississippi River Valley and the Eastern United States signaled the need for infrastructure projects such as the Mississippi River railroad crossing at Clinton, Iowa. Overtime, political, economic and developmental factors caused such railroad crossing to undergo three major makeovers---the present one being a century old. Opened in 1910, the third and present bridge owes its sustainability to its distinctive design: trusses that are "hung from A-frames mounted on the turntable" (p. 33).

On the other hand, the Dragon Bridge of Li Chun in Ancient China, an "open-spanderel, segmental, stone-arch bridge" (p. 36) constructed in the Sui Dynasty was completed in 606 AD succeeding over a decade of construction. Leaping across the Xiao River, this bridge is known by many names that recognise the said bridge's distinctiveness. It is known as the *Zhaozhou Bridge* after the town in which it is located, "The Great Stone Bridge" for its long-span achievement, "The Dragon Bridge" for the carved dragon motifs; and as the *An Ji Bridge* that means "safe crossing".

Martin Burke Jr. and Huan Chen Tan, the authors of this paper, provided a superbly comprehensive compilation of the bridge details: from the bridge type, to the bridge's puzzling foundation, the authors assert that Lu Chun, the genius behind this bridge was truly an architect to admire.

The examination of the visual aesthetic characteristics of the An Ji Bridge also makes clear the visual unity, spatial recognition and sheer human genius that this bridge ensues. From the bridge's design, it can be interpreted that this bridge was built to resist periodic floods. The presence of sculpted dragon eggs at the arch rib's apex, which symbolise the Chinese belief that dragons control water spirits and prevent disasters, also corroborates Lu Chun's purpose for building the bridge. Considering the Dragon Bridge's architectural, aesthetic and cultural feats, the authors end the article with the question "What could have been the motivating force that induced Li Chun to have created such a remarkable structure?". After 1,400 years, they say, all one can do is "question, marvel and wonder" (p. 56).

The second part of this book is a compilation of articles that deal with bridge management. Amy Squitieri and Bob Newbery examine the bridges that connect Milwaukee's "Emerald Necklace" comprised of thirteen park ways that are scattered around the city. Although the Milwaukee history parkway system is largely intact in terms of traditional

architecture, the authors detected a need for roadways parkways, and ultimately, bridges, to meet the needs of today's society. In 2006, the owner of most of the bridges, the Milwaukee County, adapted new approaches in designing new bridges that provide a new interpretation for the historic parkways.

Furthermore, Robert M. Frame III and Steven Olson, present a collaborative strategy for historians and engineers in managing historic bridges in Minnesota. With a goal to preserve historic bridges that retains the qualities that give a bridge historic significance while being functional with respect to transportation purposes, both authors delineate the responsibilities of both historians and engineers. The historian determines the bridges' significance, identifies distinctive features, and applies the Secretary of the Interior's Standards (SOIS) while collaborating with the project's engineer. On the other hand, the project engineer is responsible for assessing the transportation needs onsite, the bridge's present condition, the needed rehabilitation, and the estimated costs. Both engineer and historian share the same time frame and have close tie-ups with one another to ensure efficiency. This management plan demonstrates a balance between the bridges' past, present and future, as both historian and engineer have complementary roles. In the end, this collaboration "provides predictability for the bridge owner, who can have a better understanding... for the historic bridge" (p. 84).

The Third Part deals with Bridge Evaluation. Ching Chiaw Choo and Issam Hark probe on the structural deck evaluation of the John A. Roebling Suspension Bridge that crosses the Ohio River to connect Kentucky and Ohio. Completed in 1867, this bridge was honoured as a National Historic Civil Engineering Landmark by the American Society of Civil Engineers. This research aimed to conduct a structural evaluation to determine the maximum gross weight allowable on roadways or bridge deck.

Alan Lutenegger examines extant Lenticular Iron Truss Bridges from the Berlin Iron Bridge Company. To date, only 50 out of the 500–600 iron truss bridges manufactured by the Berlin Iron Bridge Company from 1880 to 1900 are in existence. Located in New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York and New Jersey, all 50 brides were documented over a period of five years. Known to be functional during the mid to late 19th century, these bridges exemplify a special type of "catalog bridge" with unique designs. The author provided a comparative study of the existing bridges, and provided analyses on the number of panels, the span (total length of the bridge), mid-span height, and aspect ratio.

Frederick Rutz and Kevin Rens present a research overview of wind and truss bridges. Banking on the Dr. Frank Hattfield's premise that conventional truss analysis undermines the strength of metal truss bridges, the focus of this paper is the stiffening effect of decks in historic truss bridges.

The book's fourth and last part deals with the preservation, rehabilitation and restoration of historic Bridges. With an overview by Allan King Sloan, Chapters 11 through 15 discuss adaptive measures for iron bridges, preservation techniques for stone masonry, the rehabilitation of historic bridges in Massachusetts and Tennessee, and the Reinvention of Squire Whipple's Bridge.

In the field of archaeology, bridges are crucial forms of immovable heritage that speak of a society's complexity, mobility, trade relations and development. The first bridges were made of natural objects such as rocks, tree trunks, vines, and other forms of vegetation (DeLony 1996). Historical interest in bridges had increased in centuries succeeding the Medieval Period, where information regarding the descriptions of the conditions of bridges were beginning to be archived (Harrison 2007). Paying close attention on the evolution of bridges is a testament of human cognitive and cultural evolution as well as the establishment of societal relations. This compilation of papers focusing on the management and history of bridges in the United States and beyond is a comprehensive resource fabric that not only documents, but also analyses the sustainability of each bridge in terms of their respective pasts, presents and futures.

In the Philippines, the same effort to salvage the country's historic bridges is very much alive. Architect Anna Gonzales (2006) documented the Malagonlong Bridge, one of the oldest and longest stone arched bridges found in Tayabas, Quezon Province, a former Spanish colony in the Philippines' Southern Tagalog Region. The National Historical Institute (NHI) also includes bridges in the list of structures that are to be given historical importance, depending on their setting and not just individual characteristics.

Thus, as seen through institutional efforts to preserve the integrity and existence of countless historical bridges all over the world, efforts to salvage forgotten bridges and intensify the safeguarding of operational

ones are encouraged. Clearly, this book highlights the importance of yesterday's bridges in relation to today's and tomorrow's bridges.

References

- Gonzales, Anna. 2006. Bridging the Past, Present and Future: A Conservation Management Action Plan for Malagonlong Bridge Tayabas, Quezon Province, Philippines. Unpublished Manuscript. Lund University, Sweden.
- Harrison, David. 2007. *The Bridges of Medieval England: Transport and Society* 400-1800. Oxford: Clarendon Press.
- DeLony, E. 1996. Context for World Heritage Bridges. From *ICOMOS*. Accessed 6 October 2010, from <u>http://www.icomos.org/studies/</u> <u>bridges.htm</u>.
- National Historical Institute. n.d. *Criteria for Identification of Historic Sites and Structures*. Manila: N.P.

The Letter and the Scroll: What Archaeology Tells Us about the Bible Robin Currie and Stephen G. Hyslop 2009. Washington D.C.: National Geographic

Review by Melodina Sy Cruz Graduate student Archaeological Studies Program, University of the Philippines

The Letter and the Scroll, a comprehensive book on the Biblical world, starts with an introduction to the Bible, narrating briefly how the Bible came to be what it is now, from the selection of the books to be included to the translations that have been made. It delves into archaeological finds, the most famous of which is the complete version of the Book of Isaiah which was part of the Dead Sea Scrolls discovered near the ruins of Qumran by Bedouin shepherds in 1947. The authors also explain the importance of the Bible as a written record of the Biblical world which encompasses the Near East or the Middle East, as well as parts of the Mediterranean, the whole known as Ancient Mesopotamia. Moreover, it is a record of the interaction of the Hebrew people with other groups (Old Testament), as well as the co-existence of the Christians with non-Christians (New Testament). Finally, the Bible is seen as a guide in the archaeology of the Biblical World.

This book is targeted at those who hold a deep interest in the Bible, for if there's one literary work that has generated much controversy, it would have to be the Holy Bible. Since the Christian Medieval Period in Europe, people have long proposed various interpretations that have caused great disputes. Indeed, while being beset with problems both internally and externally throughout the years, Christianity as a whole, as well as its forebear Judaism, has been strong even with the changing times and even with scientific progresses that gave us Darwin's theory of evolution and Lyell's uniformitarianism which challenged views on the Judeo-Christian religion. With the discovery of Neolithic tools, Bishop Ussher's computation of the age of the earth was questioned. Indeed, archaeology was first seen as an added menace to the increasing attacks against the Judeo-Christian religion. But that was so yesterday. At present, instead of rejecting claims made by archaeology and insisting on the truth of the Bible, the clergy has sought the discipline as a friend rather than as a foe. The main aim is to use archaeological discoveries in verifying the things mentioned in the Bible, which would not only preserve the validity of the Bible as a historical account, but also to increase faith among the religious groups.

The book is optimistic that through archaeology, a better understanding of the Bible can be attained. According to Currie and Hyslop, authors of the book, the purpose of the book is "not to prove or disprove the Bible, but to explore the world that gave rise to its scriptures and consider them in their historical context—an approach that can enhance one's appreciation of the Bible, both as a work of history and a statement of faith." (p. 19)

Indeed, the book is consistent with its goals. With maps that go alongside the texts and crisp pictures of unearthed finds, it is relatively easy for readers to follow the narrative and to locate where specific important events occurred as these are plotted in the maps of the ancient world. The maps also serve as a useful tool to allow readers a glimpse of the extension of the different empires which had interactions with the Hebrews and the first Christians. To complete the very visual appeal of the book, famous Biblically themed paintings from different periods created by European painters are inserted. Famous archaeologists are also mentioned together with their invaluable work.

One of the most interesting chapters is Chapter One, wherein the focus is on Leonard Woolley and his discovery of the alleged evidence of

the Great Flood. And because when talking about floods, it is inevitable to discuss also the other flood myths of Mesopotamia, photos of clay tablets with brief interpretations are thoughtfully included. In Chapter Two, which covers the Biblical Egypt, the most interesting part is how archaeology aids in the explanation of seemingly incredible accounts of the plagues. It is revealed that plagues and natural disasters were recorded in myths as well as on an extant Famine Stela. Moreover, a photograph of swarms of locusts in Southern Israel, taken in November 2004, is shown. These swarms allegedly came from Egypt.

Another notable archaeologist featured in the book is Austen Henry Layard who excavated at Nimrod and discovered a black marble obelisk, as presented in Chapter Six. He also discovered the palace of King Sennacherib wherein the walls are adorned with reliefs depicting the king's many achievements, with the conquest of Lachish (second most important city in Judah after Jerusalem) being the most Biblically relevant and significant. The Taylor Prism, where the conqueror-king boasted the tribute of 30 talents of gold and 800 talents of silver given to him, stands in contrast to the 30 talents of gold and 300 talents of silver demanded by the king as recorded in the *Book of Kings* 18:14. (pp. 194-196)

Another interesting topic covered by the book is that of the esoteric communities like the Essenes. Chapter Six mentions that in the Qumran cave, all books except the Book of Esther can be found. The authors did not probe the details nor try to investigate the reason for the exclusion of the said book. It is therefore incumbent upon the reviewer who has read the entire Bible many times over to explain why. In all the books in the Bible, it is curious to note that the *Book of Esther* is the only one and only book which presents a narrative without any divine or supernatural intervention. Perhaps it is because of this exclusion of the book by whatever sect that lived in the Qumran caves.

Chapter Seven focuses on the life of Jesus Christ as can backed up by archaeology and the Bible. While many people are hungry for details about the Holy Grail, this book disappoints in that it does not even bother to mention even that myth. But it is quite pardonable since there is already a lot of literature going around regarding the Grail myth and perhaps with the belief that it is just one of the many intrigues conjured to make Jesus' life more appealing. Still, the inclusion of the grail myth would have made this chapter more exciting. It would also be of worth to know what the authors think of the said myth.

To compensate for the lack of reference to the grail myth, however, one controversial artefact is presented, also in Chapter Seven. The elaborate ossuary has the name Yehoseph bar Qypa inscribed on its side. It is believed to be the tomb of the high priest Joseph Caiaphas. It is disappointing though, that the authors failed to mention the many hoaxes created involving tombs and ossuaries. In fact, in a news article published in the World News section of the *Philippine Daily Inquirer* dated 31 December, 2004, it was found out that the ossuary of Jesus' brother James, which was earlier believed to be authentic, was nothing but a forgery. It would have been nice if hoaxes and frauds involving Biblical finds were also included in the book, just so readers would be aware that sometimes, people are wont to do anything to prove something.

While the contents are truly engaging and interesting, it would have been better if the authors have included or discussed briefly the methods employed in Biblical archaeology so as to convince readers that Biblical archaeology is not just some discipline working under a religious propaganda. It could have also explained how ancient scripts are deciphered. The book lacks information on how interpretation is done, merely presenting interpretations and leaving the reader to take a leap of faith that these archaeologists indeed know what they are doing. Another shortcoming is the lack of measurements of the artefacts. Only a few are given estimate measurements, and only a few are described as to what they are made of. The rest are just presented as is, in crisp and clear photos, with their names. It is quite understandable, however, that the book is not a site report, and as such, it is practically targeted at the general public who is merely interested in Biblical archaeology but who does not wish to delve deep into the archaeological world. Making the book look like a site monograph would indeed have turned people off at the mere sight of incomprehensible photos and descriptions.

On the whole, the book is an invaluable source of photos of unearthed artefacts from Ancient Mesopotamia, as well as concise information on Biblical sites. That the authors exerted effort in consolidating archaeological works already done, together with interpretations and comparisons with Biblical accounts is appreciated.

Reference

Currie, R. and S. Hyslop. 2009. The Letter and the Scroll: What Archaeology

Tells Us about the Bible. Washington D.C.: National Geographic.

Kalman, M. 2009. "The Burial Box of Jesus' Brother: A Fraud?". In *Time World*, September 5. Accessed 20 July 2011, from <u>http://</u> <u>www.time.com/time/world/article/0,8599,1920720,00.html.</u>

Submissions

Papers may be submitted throughout the year. Articles are reviewed by at least three specialists from a pool of international scholars. Reviewers' comments and suggestions are forwarded to the author(s), who should implement them in the final version of the paper. The main text, including captions, must not be more than 7,000 words provided that this can stand on their own and have not been previously published. Book reviews are also accepted. We also accept longer articles. Manuscripts may be mailed or personally submitted with a soft copy to:

The Editor Hukay Archaeological Studies Program University of the Philippines Diliman, Quezon City Philippines 1101

Or the articles can be sent to Grace Barretto-Tesoro at mdbarretto@up.edu.ph

For orders, please contact The University of the Philippines Press at press@up.edu.ph or http://www.uppress.com/

For more information, please visit http://asp.up.edu.ph/hukay/



Hukay

2011

A Report on the Archaeological Survey Along the Coastal Area of Misamis Oriental, Philippines Leee M. Neri

Spacing Archaeological Sites: An Application of the Geographical Information System to Philippine Archaeology Katherine K. Esteves

Incorporating a Tourism Agenda in Public Archaeology Work *Jack G. L. Medrana*

BOOK REVIEWS

Timothy Clack and Marcus Brittain (Eds.). 2009. *Archaeology and the Media. Review by Froilyn Anne Naparan*

Hojjat Adeli (Ed.). 2008. *Historic Bridges: Evaluation, Preservation and Management. Review by Kathleen Tantuico*

Robin Currie and Stephen G. Hyslop. 2009. *The Letter and the Scroll: What Archaeology Tells Us about the Bible. Review by Melodina Sy Cruz*