

## **Astilleros: the Spanish shipyards of Sorsogon**

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### **Abstract**

*When the Spanish colonizers reached Philippine soils, one of the earliest places they occupied is the tip of southern Luzon including the San Bernardino Strait. The whole area was known as Ambos Camarines and Albay. At present, it is the Bicol Region comprised of six provinces. As one of the earliest Spanish-occupied areas, it was exposed to Spanish activities like building of churches, government halls and shipbuilding. Ancient shipyards called astilleros are found in Bicol. These were used for construction and repair of the galleons that plied the Manila-Acapulco trade. This present archaeological study looks into the shipyards of Sorsogon where three shipyards were documented.*

**Key words:** Astillero, Shipyard, Embocadero, Metal smelting, Seamanship

### **Introduction**

The Spanish colonization of the Philippine archipelago (Scott, 1994, 1992; Arcilla 1971; Pigafetta and Transylvanus, 1969) resulted in major changes in the lives of the peoples. Communities lost their independence with the Spanish imposition of the plaza complex resettling people within the government and church's ambit (Jocano, 1998; Robles 1969). The majority of the local inhabitants were looked down by the colonizers because of their different manner of dressing, eating and skin color while at the same time surprised that these same people were very knowledgeable in seamanship and metallurgy (Agoncillo, 1990; Jocano, 1998; Scott, 1994, 1992, 1977). Their knowledge was exposed because of their ability to build different types and sizes of boats from memory. Since the Spanish government had decided to maintain the Philippines, there was a need to cut on cost both on the galleons and government. One measure was to build the galleons locally through the *astilleros* or shipyards. Filipino involvement were either direct through the actual construction of the shipyard, the *galleons* and as seafarers, may be indirectly through metallurgy and related activities (Agoncillo, 1990; Bolunia, 1995; Jocano, 1998; Mallari, 1999; Scott, 1981). The *astilleros* displaced many

Filipinos because of their forcible transfer near the shipyard. Bicol experienced this. One of its provinces, Sorsogon, was the location of several shipyards particularly in the towns of Donsol and Pilar (Fig. 1). This present research looked into three *astilleros* in Sorsogon. The objective is to find out why the Spaniards decided to establish *astilleros* in this part of the archipelago and to validate what was written on documents by archaeological evidences

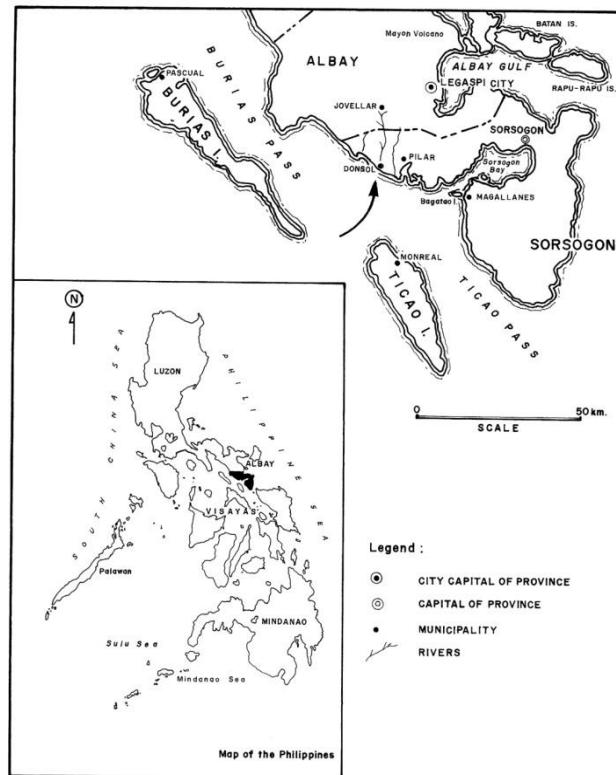


Fig. 1. Map of Sorsogon Province. (NAMRIA)

## Methodology

Library and archival research were conducted. Interviews with key cultural consultants carried out. These were senior members of the population like Pedro Nocido, 85 years old, resident of the *astillero* since he was five. Archaeological activities included foot surveys, reconnaissance and excavations. Mapping of each *astillero* was done to produce visual representation of the sites. Artifacts like metal objects, earthenware and stoneware sherds as well as the features like furnace, ruins of buildings were collected and drawn and included in the analysis. Laboratory tests were conducted on some of the artifacts.

## The site

The Bicol Region is found at the southern tip of Luzon, with Sorsogon as its southernmost province (Schurz, 1985; Bolunia, 1995; 1997; 1998). It was a favorable choice because it was directly located on the route of the galleons that plied the Manila-Acapulco trade. It had forests with the best trees for shipbuilding and a population who were skilled in boat-building and metal working. Sorsogon is bounded on the north by Albay, on the east by the Pacific Ocean, on the south by San Bernardino Strait, and on the west by Ticao and Burias Passes (Fig. 2). It has a total land area of 2,141.4 sq. km. The San Bernardino Strait or the *Embocadero* is the passage of all

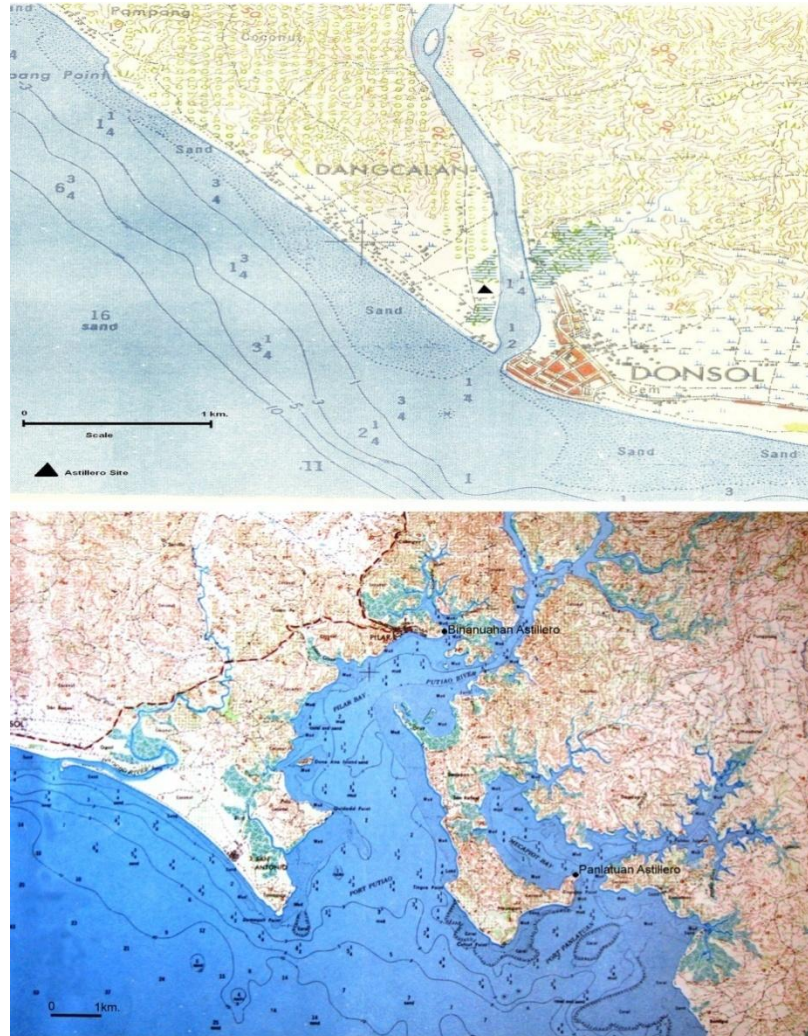


Fig. 2. Maps showing the location of the astilleros in the towns of Donsol (above) and Pilar (below). (NAMRIA)

galleons (Malanyaon, 1991). Two of its towns, Donsol and Pilar, face the South China Sea on the west.

Both towns are sheltered from typhoons. Both have extensive coasts dotted by bays, coves and major rivers that are navigable (Fig. 2). The town of Donsol is at the eastern side of the Donsol River (Dery, 1991; Goyena del Prado, 1981; Mallari, 1990). Its land area is approximately 156.3 square kilometers comprised of flatlands and low

mountains, streams and rivers, with Donsol River (12.908<sup>0</sup> N and 123.598<sup>0</sup> E) as a major river used for transport and food source. The town of Pilar (12.926<sup>0</sup> N and 123.676<sup>0</sup> E) is found east of Donsol with an approximate area of 248.1313 square kilometers of forests, hills, rivers and bays. An extensive mangrove surrounds it for a safe haven for boat and people.

### **The Astilleros of Donsol and Pilar, Sorsogon**

*Astillero* is the Spanish term for shipyard. These were established during the Spanish Colonial Period to cut on the construction cost of the galleons that plied the Manila-Acapulco route (Schurz, 1985), the lifeline of the Spanish government. Their seaworthiness was of primary importance for an uninterrupted trade and exchange of European goods and silver and Chinese trade ware ceramics, silks and precious objects. The *astilleros* were either established at the mouth of a river like the Donsol *astillero* or on a cove like the Pilar *astilleros*. The two *astilleros* of Pilar are separated by bodies of waters. One is inland while the other is nearer the sea. Both are adjacent to deep waters. The more inland is *Binanuahan Astillero*, located at the Pilar Peninsula. Prior to road networks, this can be reached by boat through Pilar Bay. The bay is a natural harbor and a natural barrier. The survey of the site yielded artifacts like slag, corroded iron nails, Chinese, European and local ceramic sherds. Documented were ruins of an old stone structure (Fig. 3) with a floor area of 288 square meters and thick walls (Bolunia,



*Fig. 3. One of the remaining walls of the structure in Panlatuan Astillero. (Mary Jane Louise A. Bolunia).*

2006). Provisions for large windows were also evident. A few meters away are remains of the palm palisade *anahaw* (*Livistona sp.*). It is approximately 100 m long with only the top visible during low tide. Two large wooden posts with a diameter of 40-50



cm were also documented.

The *Panlatuan Astillero* (Fig. 4) is located on a cove. Deep waters, two rivers, an extensive mangrove made it a favorable choice for an *astillero* including a vast flatland and a hill. Corroded iron nails, chain rings, bronze sheathing nails, iron tools, a porthole window, Chinese, European and local ceramic sherds, brick tiles and Spanish coin were recovered. A large slag concentration was also found on the northeastern side. Remains of large wooden posts were equidistantly buried. Ruins of watchtowers

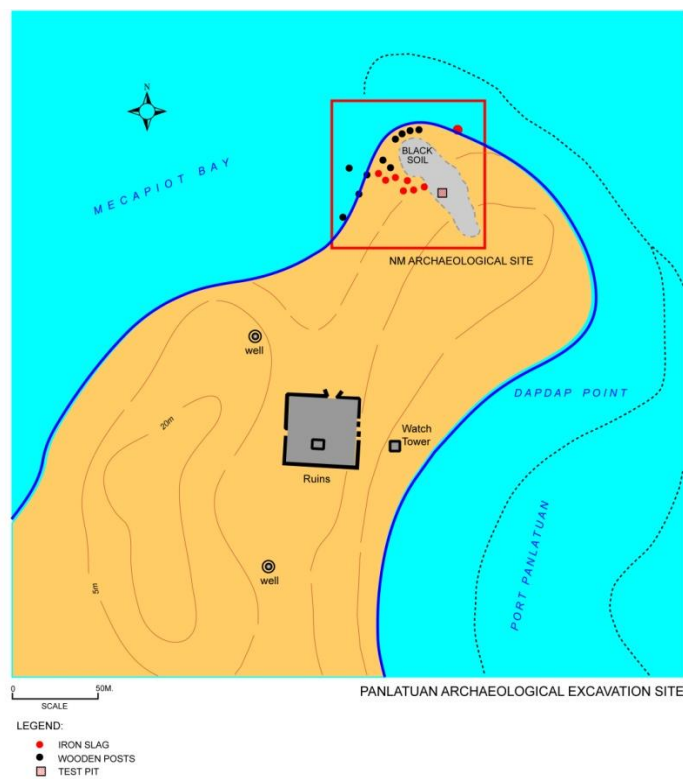


Fig. 4. The Panlatuan Astillero showing the location of the various features associated with the shipyard. (National Museum, Philippines)

and a warehouse were also documented including remains of a big gate (Bolunia, Santiago and Penalosa, 2011). Two old deep wells were still being used by the owners. The Donsol Astillero is located on the lower reaches of the Donsol River. This *astillero* was established by reclaiming part of the mangrove around the area based on the auger-coring conducted (Bolunia, 1997, 1998). It has an approximate

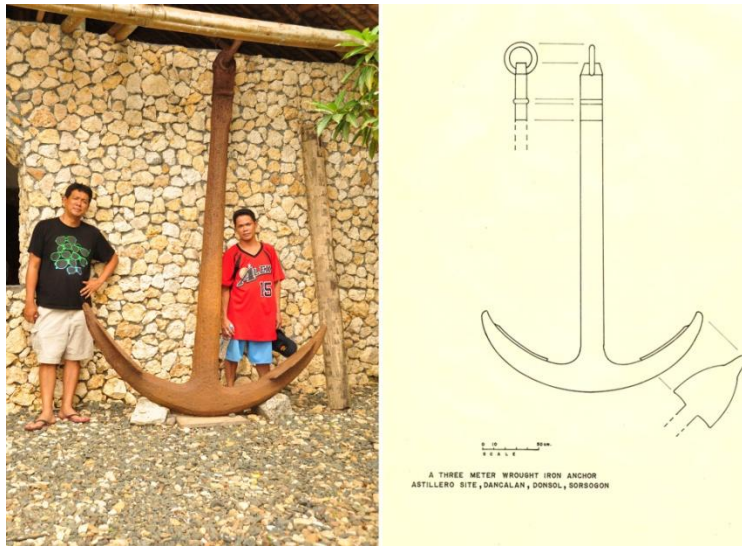


Fig. 5. The team members, Mssrs. Penalosa and Toling, posing beside the 3 m long anchor from the Donsol astillero. At right is a scientific illustration of the same anchor. (Mary Jane Louise A. Bolunia)

area of 11,000 square meters and thickness of 1.75 m with 19,250 cubic meters of sandy clay fill (Aguilera, 1997). Survey, test and full-blown excavations showed that 296 square meters were used for various purposes (Bolunia, 1995; 1997; 1998). Thousands of artifacts and ecofacts were recovered and the remains of the base of a furnace (Bolunia, 1997; 1998). Iron nails and spikes, copper sheathing nails and cut sheets, lead objects, Chinese and European trade ware ceramic sherds, animal bones, shells, wood, lime, stones, Spanish bronze coins, and more than 400 kg of slag were recovered (Bolunia, 1997; 1998). Earthenware moulds showing traces of melted copper and clay tubes or *tuyeres* were also recovered. A three-meter anchor was also found (Fig. 5). Coal, coke and charcoal were the fuel types recovered. The coke was of high quality based the analysis conducted by the Department of Energy (Bolunia 1998). Coal and coke are major ingredients in iron smelting together with lime and the ore. Charcoal was sourced from the mangrove (*Rhizophora sp.*) that grew abundantly around. It is a very good fuel because it burns longer and produces a high temperature. The furnace was for smelting based on the slag, lime and burnt surface observed. Iron tools like tongs, wedge, anvil were also recovered. Large wooden posts, approximately 30 cm were also documented in the direction of the

river. Previous studies on the Manila Galleon trade usually focused on the shipwreck and its economic importance. Studies on the shipyards where these galleons were built and repaired are few (Dery, 1991; Schurz, 1985). These assumptions were arrived at after reviewing the available documents. The study of the *astilleros* showed that the Spaniards took advantage of the favorable landscape of Sorsogon and its strategic location in relation to the San Bernardino Strait. The Donsol *Astillero* was studied extensively because of its accessibility (Bolunia, 1995; 1997; 1998). The knowledge of the local people was picked when a three-meter Spanish anchor was exposed after a flood in the 1950s. Mallari (1990; 1999) writes that a shipyard was built in Donsol where an encounter with pirates occurred resulting in the abandonment of its anchor. Pedro Nocido, mentioned of the presence of the frame of a big ship whose keel and ribs (frame) were eventually used as fuel. Furthermore, Nocido described that the area was flatland planted with hardwoods. Linguistically, the people residing in the Donsol *astillero* spoke the dialect spoken in Pilar. They are the only ones not speaking the Donsol dialect. They attribute this to their ancestors from Pilar which was a part of Donsol then. Nocido also mentioned that the Spanish mestizo owner was a friend of the Pilar *astillero* owners. The presence of wooden posts near the riverbanks can be associated with a pier. These wooden posts approximately 30 - 40 cm were deeply buried for mooring. The posts have pointed and grooved ends that would secure them. In the Panlatuan *astillero*, the wooden posts were still firmly secured even if only 30 cm can be seen during low tide. They were arranged either parallel or perpendicular to each other.

The presence of stone structures point to a single construction architecture prevalent during the Spanish period. The use of tiles as roof was observed as well as the construction of thick walls using riverine stones and adobe tuff. They have big window and door frames. The deep water well used adobe tuff while the watch tower used riverine stones. Lastly, the fence that enclosed the Panlatuan *Astillero* also used broken glass on the top for added protection. Based on the artifacts recovered, the structures documented and the accounts given by the cultural consultants, the *astilleros* were established to complement each other based on the types of activities that were carried out. The Donsol *astillero* was used as construction and repair site

and smelting site while the Binanuahan *astillero* must have been the administrative site and the Panlatuan *astillero* the construction site and smelting site. It is easier to smelt ore in Donsol and Panlatuan because of the rivers that can transport the coal from its origin. It is also easy to roll the galleon once construction or repair work is finished. The waters nearby are also deep; favorable for rolling the ship. In the Binanuahan *astillero*, the remains of the palisade can be construed as a way of securing the place of administration. The ruins point more to a building of commerce because of the presence of big windows, a courtyard and doors.

It has been said by many authors (Schurz, 1985; Mallari, 1990; Dery, 1991, 1996; Legarda, 1999) that the Bicol Region was the location of shipyards because of the forests and its skilled boatbuilders. Bicol, especially Sorsogon, is dotted with bays and coves as well as navigable rivers and streams that serve as transport system for humans and cargoes. Sorsogon faces the famous San Bernardino Strait or the *Embocadero*, the main access route for the galleons. Bicolanos, like the other boat builders, were capable of building big and small boats (Cuevas, Ronquillo and Santiago, 2006; Scott, 1981, 1994). Those who worked in the *astilleros* were not only skilled boat builders and mariners but also skilled in handling metals. Up to the present, there are still blacksmiths in Sorsogon making machetes and other objects that may be requested.

Archaeological evidences have indicated that even as early as 500 BC there were already inhabitants in the archipelago who had knowledge of metallurgy (Beyer, 1947; Fox, 1970; Solheim, 2002; Dizon, 1988). Dizon (1979) in his archaeological excavation in Sorsogon was able to identify some iron tools and implements that date to 200 BC. This knowledge is thus presumed to have persisted until the coming of the Spaniards. It is not the domain of this paper to tackle how this knowledge was acquired. The shipyards of Sorsogon continue to beguile those who want to know what these bastions of Spanish colonization looked like. At present, there are no shipyards to construct galleons but many Bicolanos, especially those from the towns of Donsol and Pilar are still making boats either for their own use or for commerce. They still use their skills in choosing which wood is good for the keel and which



should be used for other parts of the boat. They do not use blueprints or complex tools. When asked, their ready answer is still “because it has been done that way”.

## **Discussion**

Previous studies on the Manila Galleon Trade usually focused on the shipwreck and its economic importance. Studies on the shipyards where these galleons were built and repaired are few and scanty (Dery 1991; Schurz 1985). Their locations were not specifically pointed out while the activities were left out for the reader’s own interpretations. These assumptions were arrived at after reviewing the available documents. Based on the three *astilleros*, the Spaniards took advantage of the favorable landscape and strategic location of Sorsogon. The Donsol *Astillero* was studied extensively because of its accessibility (Bolunia 1995; 1997; 1998). This location became a bane because many people decided to recycle the materials. The knowledge of the local people was alerted when a strong typhoon hit the town of Donsol in the 1950s flooding the whole town including the *astillero*. After the water receded, a 3 m Spanish anchor was exposed. Mallari (1990; 1999) wrote that there was once a shipyard in Donsol and an encounter with pirates occurred resulting in burning the galleon thus the anchor. My cultural consultant, Pedro Nocido, also mentioned of the presence of the frame of a big ship whose keel and ribs (frame) were eventually used by the locals for fuel. Had I come a earlier, I would have seen it lying on the shore. Nobody was familiar that the wooden frame was part of a ship although they often heard that these ships went to the *alta mar* or high seas. Furthermore, Nocido described that the area was flatland planted with hardwoods. Unfortunately, when I did my study, only coconut and fruit trees remained in the *astillero*.

Linguistically, the people residing in the Donsol *astillero* spoke the Bicol Pilar dialect. They are the only ones not speaking the Bicol Donsol dialect. They attribute this to their ancestors originating from Pilar which was part of Donsol then. The Spanish mestizo owner was a friend of the owners of the Pilar *astillero* according to Nocido. The wooden posts near the riverbanks in all the three *astilleros* can be associated with the presence of a pier. These huge wooden posts approximately 30-40 cm in diameter that were deeply buried were neither for houses nor trading centers. This

can be seen in the Donsol *astillero* where these wooden posts had pointed and grooved ends that would secure them from being swayed. In the Panlatuan *astillero*, the wooden posts were still firmly secured on the ground even if only approximately 30 cm can be seen during low tide. They were arranged either parallel or perpendicular to each other. The presence of structures in the three *astilleros* also point to a single construction architecture that was prevalent during the Spanish period. The use of earthenware roofing tiles, thick walls using riverine stones and adobe tuff and lime mortar. The remains of the different structures are similar to those other Spanish period structures that have big windows and door frames. The deep well for water also used adobe tuff as building material. The foundation for the watch tower also used riverine cobble stones. Lastly, the fence that enclosed the Panlatuan *Astillero* did not only use cobble stones but also added imported broken glass on the top for added protection.

Based on the artifacts recovered, the structures documented and the accounts given by the cultural consultants, the three *astilleros* were established to complement each other. This can be based on the types of activities that were carried out in the different *astilleros* where there was no duplication observed. The Donsol *astillero* was used as construction and repair site for galleons and smelting site too. The Binanuahan *astillero* must have been the administrative site while the Panlatuan *astillero* was also the construction site for galleons and smelting site for iron. It is easier to smelt ore in Donsol and Panlatuan because of the rivers that can transport the coal from Batan Island to the sites. It is also easy to roll the galleon once construction or repair work is finished and this same for the Panlatuan *astillero*. The area was large and it was possible to conduct various shipbuilding activities. The ruins of a watchtower as well as the possible warehouse and the large water wells are testament to its size. Large amount of slag and the oily soil can still be seen at present near the shore that would point to smelting activities before. The waters nearby is also deep, favorable for rolling the ship once it is built or repaired. In the Binanuahan *astillero* on the other hand, the remains of the palisade can be construed as a way of securing the place of administration. The ruins of the structure point more to a house or building of commerce rather than a storage structure because of the

presence of openings for windows, a courtyard and doors. Unfortunately, it was impossible to see the full extent of the palisade because of natural (tidal changes) and human interventions. Interviews conducted with the locals confirmed the impression that much of the *astillero* is already underwater because of the presence of two river systems that meet nearby.

It has been said by many authors (Schurz, 1985; Mallari, 1990; Dery, 1991; Legarda, 1999) that the Bicol Region was one of the areas where shipyards were constructed because it had some of the best forests where hardwoods can be found in addition to its skilled boat builders. Bicol, especially Sorsogon, is dotted with bays and coves as well as navigable rivers and streams that serve as transport system for human and cargoes alike. Both natural and human resources made Sorsogon a good choice for the establishment of *astilleros* with Sorsogon facing the famous San Bernardino Strait, the main route of the galleons. Bicolanos, like the other boat builders in the country, were capable of building big and small boats (Cuevas and Santiago, 2006; Scott, 1981; 1994). They were skilled boat-builders, mariners and metallurgists. At present, there are still blacksmiths in Sorsogon making machetes. Archaeological evidences have indicated that as early as 500 BC the inhabitants of the archipelago had knowledge of metallurgy (Beyer, 1947; Fox, 1970; Solheim, 2002; Dizon, 1988, 1979). This knowledge is thus presumed to have persisted until the coming of the Spaniards. The shipyards of Sorsogon continue to beguile people. At present, there are no more shipyards but many Bicolanos, including those from Donsol and Pilar still making boats for their own use or for commerce. They do not have blueprints nor complex tools. When asked, their answer is “because it has been done that way”.

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