16th Century Portuguese Shipwreck Found Off Malacca

by Michael Flecker

Michael Flecker discovered a 16th century remains of a ship in 2005. This is a detailed account of how he searched for it and uncovered its significance.

The muzzle of a smaller bronze cannon makes a perfect home for a crab.

A nearly intact stoneware jar flanked by wafting tube worms.

It is probably the oldest European shipwreck ever discovered in Malaysia. She sunk within sight of the 16th century church on St. Paul's Hill, Malacca. Today her remnants lie untouched 32 m beneath the surface, in murky swift flowing waters. A large cannon points impotently out of the sediment, the once formidable barrel now a comfortable home for a potato cod.

THE DISCOVERY

Having established a Malaysian registered company and obtained a survey permit from the Marine Department, I set out with representatives from the National Museum to survey a nine square mile area in federal waters off the historical port of Malacca. A basic wooden survey boat was fitted out with a side-scan-sonar, to detect objects lying proud of the seabed, a magnetometer, to detect either buried or exposed ferrous metals such as cannons and anchors, GPS (global positioning system), and computers with mapping software. Captain Rahman quickly mastered the art of steering straight survey lines following pre-programmed tracks on the computer screen. Isnin, the crewman, never grew weary of pulling in and letting out tow cables, regardless of the day of the week.

For well over a month we trailed the sensitive instruments behind the boat, from sunup to sundown, in sweltering heat and torrential rain. We chugged along at a painfully slow three knots, the speed necessary to get high resolution data. Lunch was hastily made and consumed between the scribbling of position information on the side-scan printout.

There was no lack of targets, promising anomalies that showed up on the side-scan or the mag or both. It was only possible to dive productively during slack water between neap tides. Even then the visibility was often nearly zero. Strong currents quickly set in, propelling nasty jellyfish towards me out of the gloom. Metres of stinging tentacles were left wrapped around the rope wherever they struck. Continuously dodging meant that hanging off the decompression line for up to an hour was far from restful. I covered up as best I could with a full length wetsuit, hood, booties and gloves, but lips were impossible to protect and the jellyfish seemed to know this.

As I was diving solo I strapped two scuba tanks on my back, each with its own regulator. This provided a 100 percent backup and plenty of air for the long decompression stops. A powerful head-mounted light provided some visibility, although swirling clouds of mud would frequently cause a white-out.

These trials and tribulations would have been well compensated if I was diving on an ancient wreck but most of the inspection dives were on scattered rock outcrops, which happen to look

just like old shipwrecks on the sonar. The only way to find out for sure was to dive on every one of them. I found one small but prominent side-scan anomaly by literally swimming into it, head first. I had been diving in very bad visibility with my eyes peeled on the seabed centimetres away when I thumped into the wooden hull of a small fishing boat. Following the timbers up to the gunnel I caught sight of the license number, MNF2323. The superstructure was still intact and full of fishing and cooking gear. I half expected to bump into the remains of some unfortunate fishermen. The wreck couldn't have been down there for much more than a month.

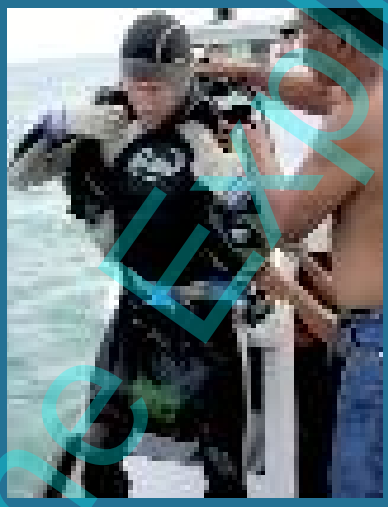
The water was slightly clearer when I discovered a small wooden cargo ship. It was just as well because the wreck was completely covered in snagged fishing nets, nets that could easily have caught me. It was modern.

There was one target that stood apart. On the side-scan it looked very much like several other targets that had already been identified as rock outcrops. In fact some of the outcrops looked more like ancient wreck signatures on the sonar than this one did. In keeping with the 'just in case' policy I dived on it anyway. In very murky water I swam into a low mound of rocks, intermingled with the usual array of plastic bags, pieces of net, assorted running shoes, and cloth fragments. These rocks were nothing like the others I had encountered. They were of various types and sizes, and most were well rounded. The shape was the key. Rocks only become rounded like that in river beds and along the seashore, where they are constantly moved and abraded. In a low energy environment 32 m below the waves such formation would not be possible. These were the ballast stones of an ancient shipwreck!

A hazy picture of the large bronze cannon clearing showing the lifting rings.

But where was the wooden structure? Where was the cargo? Where were the ship's fittings and crew's possessions? All I could find during that first dive, in which I completely circumnavigated the mound, was a piece of charcoal. This would normally have been a good sign as charcoal was often used for cooking on board. However, I had found similar pieces wedged under nearby rock outcrops, indicating that there was quite a lot of the stuff being swept along the seabed off Malacca.

I chose to carry on with the survey until a period of optimal diving conditions allowed me to get a better look at this mystifying new find. A week later I was back in the water with relatively good visibility, a little more than a metre. Within minutes of relocating the mound I swam over what



A stone cannon ball photographed in-situ (top). Cut bones are the only remnants of the crew's salted beef store (above) Personnel from the National Museum assist Dr. Flecker in preparing for a dive on the M1J wreck site (right).

appeared to be a large piece of pipe sticking out of the sand at a shallow angle. It was covered in coral and weed, but on closer examination I could make out a series of reinforcing rings and a greenish tinge to the metal. It was the muzzle of a large bronze cannon. Vigorous hand fanning revealed two rounded lugs further down the barrel. Now I was starting to get excited. These lugs once held lifting rings. Lifting rings were only used on very old cannons, ones that usually pre-dated the 17th century. After quickly tying in a base line from the cannon to a large stone at the other end of the mound my 30 minute bottom time was up.

On the next dive I took down an underwater scooter. This was not a sign of laziness but rather a portable excavation tool. By holding onto a net bag full of stones, I was able to face the scooter propeller at the sediments and blow them away, without me being blown away at the same time. The entire surface of the cannon was soon exposed. It was 2.3 m long and had two more lugs, with the lifting rings still attached, closer to the breech end. Careful scrapping of the coral near the muzzle end of the barrel revealed two cast symbols, a shield and an armillary sphere. Only the Portuguese cast the armillary sphere on their cannons.

Dives over the next few days proved extremely interesting, although only a smattering of clues were unearthed. The scooter blasted enough sand away from the cannon to expose a small part of the underlying ship's hull. Continuing the test excavation along the timber eventually opened up a one square metre area with frames, stringers and hull planks, all quite badly eroded. The construction technique was clearly European.

Between the frames were two fairly well consolidated piles of bones. From the cut marks on several pieces it would seem that these were the remnants of the salted meat store, the staple diet for European crews. Fragments of rope were discovered in the same area, unfortunately in very fragile condition. Other fragmentary finds included aromatic resin and pitch which was used for calking. On top of the ballast mound rested a large lead ingot in the shape of a crescent. Not far from that were several perfectly spherical stones. These were cannon balls, the stone precursor to iron, and they were of varying calibre. Partly exposed on one side of the mound was a nearly intact stoneware ewer. Under a thin layer of sediment were several shards from large stoneware storage jars, some with simple incised decorations. In amongst these were three shards of blue-and-

white porcelain. This was a very important find. Despite the fact that the fragments were small, they all displayed identifiable decorations. Porcelain is great for dating, and dating is great for identifying a ship.

On one particular day there was remarkably good visibility, in the order of 4 m. I took full advantage of this to take photographs of the site and artefacts as only a limited amount of material was brought to the surface for identification purposes. While doing this I noticed a tubular object amongst the ballast stones. In clearing away the surrounding rocks I exposed the flared muzzle of another bronze cannon, this one much smaller than the first. Unfortunately time didn't allow me to expose more.

In between dives I had run several more high resolution side-scan passes over the wreck, and each one showed a small but distinct anomaly some 40 m out to one side of the ballast mound. With a tape measure and compass I swam out, searching in small arcs until I ran into a heavily concreted iron object protruding over a metre out of the seabed. Brief excavation around its base revealed coherent ship's structure. It seemed to be a dislocated part of the same ship, but there was nothing at all in the way of artefacts in the vicinity.

Before completing the investigation I ran the magnetometer over the wreck several more times. A substantial magnetic anomaly indicated that there was far more iron on the site than I had observed, probably in the form of buried anchors.

IDENTIFYING THE WRECK

Ancient shipwrecks don't have name-plates. If you are really lucky you might find a bell with the ship's name or a date cast on the side. But usually you must combine various pieces of evidence with the laws of probability to come up with the most likely candidate. This can usually only be done with European wrecks where ship losses are recorded in dusty archives. Asian ships tended to be owned and operated by private merchants rather than States, and therefore written records of the losses either don't exist or cannot be found.

At this point the wreck discovered off Malacca had been designated M1J, a not so romantic name signifying Malacca, survey 1, anomaly J. Having completed the investigation, and the survey, it was time to begin research and to seek the opinion of colleagues around the world in order to determine the actual name of the ship. Only when the ship is identified can its historical significance be determined.

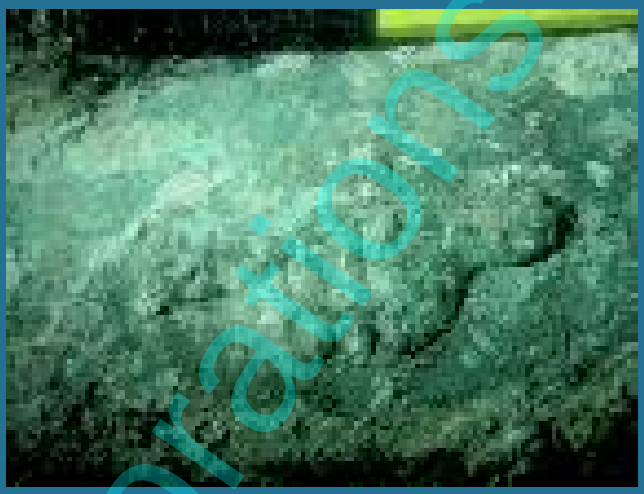
> While the M1J wreck is European, its historical context is very much Malay, and Asian. Much is made of the occupation of Malacca by various European powers, but little is heard of the efforts of local powers to prevent such conquests. The M1J wreck may well portray the great significance of those efforts.

The primary identification tool is dating. First let's take a look at the large bronze cannon. Cannons with lifting rings were one of the earliest types to be manufactured. Later two lugs, called dolphins, where cast onto the top of the cannon for this purpose. A South African cannon specialist, Gerry de Vries, has studied underwater photographs of the M1J cannon and concluded with some certitude that it was manufactured by the Portuguese between 1510 and 1560, quite likely in their enclave of Goa. The armillary sphere found on the barrel of the M1J cannon was first introduced by King Manuel, who reigned from 1495 to 1521, but continued to be used through the reigns of Kings John and Sebastian up to about 1580. Well manufactured bronze cannons could be kept in service for several decades, so manufacturing dates do not directly infer a wrecking date.

This type of cannon, with the four lifting rings and short stubby cascable, is called a *pedriero*, from the Portuguese word *pedra* meaning stone. It refers to cannons of any length and calibre that fired stone shot. Only stone shot were found on the M1J site. The M1J cannon has a calibre of 17 cm, which makes it a *camelette*, a sub-category of *pedriero*. These became obsolete by the year 1600.

Bronze cannons with lifting rings have been discovered on several shipwrecks, including the San Diego of 1600 which was lost in the Philippines. This was a Spanish ship but, as often occurs, it also carried some Portuguese cannons. Another was found on the Mauritius of 1609, lost off the west coast of Africa. That was a case of a Portuguese cannon on a Dutch ship. The Portuguese ship, Santíssimo Sacramento, which sunk off Brazil as late as 1668 also had a cannon with lifting rings, but that specific cannon was elaborately decorated giving it a much later date than the M1J cannon. Most telling is a cannon almost identical to that from the M1J wreck recovered from the Sao

A shard of kraak porcelain from the Chinese Jingdezhen kilns.



Detail of the armillary sphere cast onto the cannon barrel.

Bento, a Portuguese ship lost off South Africa in 1554, and another recovered from the Santiago, which wrecked off South Africa in 1585.

The stone cannon balls also provide a dating clue. From a report on ancient English cannons:

"Each country had large stocks of stone shot and they were reluctant to discard these stocks as a complete loss. The change from stone to iron, and from the nominal system to the 'pounder' system thus progressed over a period of several years as the stone shot were consumed and replaced by iron shot. Each country progressed independently in accordance with the stocks on hand and the urgency of the political situation. The records of the Tower of London show the introduction of 'Shot of Yron' in 1559, but there were still 'Shot of stone of several natures' in 1683."

Assuming that other European countries developed iron shot around the same time as England, this report shows that the M1J shot could date anywhere from the 16th to the late 17th century, which is not much help. The lack of iron shot on the site, more importantly, indicates that the wreck is probably of an earlier period.

Photographs of the blue-and-white porcelain shards have been sent to several specialists and it has been concluded that all three pieces were manufactured in the Jingdezhen kilns of China during the Wanli period (1573-1620). One piece is typical *kraak* porcelain, with its distinctive panelled decorations. It is difficult to be more precise than Wanli, however the ex-curator of the Groninger Museum in Holland, Christiaan Jörg, suspects that the shards are earlier rather than later Wanli. Ceramic finds on the 1585 Sao Bento wreck also have similarities to the M1J porcelain.

So the admittedly limited dating information suggests the late 16th century as the most likely time of the loss. Other archaeological evidence can now be tabled before turning to the historical record.

It is very likely that the ship exploded before sinking. The main evidence for this is the separated section of hull structure found 40 m away from the ballast mound. Going by the location of the blue-and-white porcelain shards, which almost certainly came from dishes used by the ship's officers, the dislocated section is probably from the stern of the ship. Gunpowder was usually kept in a powder room at the very bottom of the hull near the stern. Fire, usually started in battle, frequently caused the powder room to explode, with the result that the stern structure was blown clean off. This happened to the Witte Leeuw, which sank off St. Helena in 1613 after a cannon exploded above the power room: "the shippe blew up all to pieces, the after part of her, and so sunke presently". Other evidence for such an explosion is the wide scatter of small stoneware shards. Stoneware jars are inherently robust, so in open water wreck sites they would normally be found intact, or at least in big pieces.

In examining the archives we can now narrow the search down to the early Wanli period and to a sea battle (lightening is also possible but far less

likely). The hull structure of the M1J wreck is clearly European. While there have been Dutch ships carrying Portuguese cannons, it is usually only one or two cannons that are Portuguese while the vast majority are Dutch. With the single large Portuguese cannon and the small unidentified gun so far found on the M1J wreck, it is most likely a Portuguese ship. Furthermore, the Dutch did not commence their attacks on the Portuguese in Malacca until the beginning of the 17th century.

The Portuguese first occupied Malacca in 1511. The deposed leader, Parameswara, fled to Johor. Johor subsequently mounted major naval attacks on the Portuguese in Malacca that continued throughout the early part of the 16th century, and no doubt there were casualties on both sides. After that the rulers of Acheh repeatedly attacked Malacca. Even the Javanese opened fire on the city in 1574.

A large lead ingot was found on the top of the ballast pile.

Around the most likely time of the loss an interesting event took place off Malacca. Quoting in full from a report by I.A. MacGreggor in the Journal of the Malayan Branch of the Royal Asiatic Society: "In 1582 a large Achinese fleet appeared off Malacca while [Portuguese Captain Luis Monteiro] Coutinho was away in the area of Singapore Strait. Disobeying orders, Coutinho returned and attacked the Achehnese fleet with one vessel. A fierce fight took place off Malacca, between Pulau Jawa and Pulau Upeh. Coutinho managed to inflict some damage on the Achehnese, but, through carelessness with a powder pot, his own vessel blew up. Coutinho and twelve other survivors were taken prisoner by the Achehnese and martyred at Acheh on 24 March 1583, Coutinho meeting his fate by being placed in front of a basilik [large cannon] which was then fired at him."

The timing is right. The circumstances of loss are right – an explosion. And the position is right. For an observer on shore, the wreck does lie between Pulau Jawa and Pulau Upeh, but not directly between. It is actually about 4 miles from the shore.

There were other recorded losses in the early part of the 17th century. In 1606 there was a major confrontation between the Portuguese and the Dutch. Several Portuguese ships were deliberately burnt and sunk by the Portuguese themselves to avoid capture. They were much closer to shore, if not right on the beach. There were more losses, on both sides, during a battle in 1615. Again the ships seem to have gone down in relatively shallow water, and cannons were salvaged from several at the time of loss.

Coutinho's ship remains the most promising candidate, but only a full excavation of the site will provide the additional evidence necessary to fully confirm this identification. His ship would have had more cannons. Are they buried or is there another reason for the small number so far found?

THE SIGNIFICANCE

The wrecking occurs at an important time in the history of Malacca, and therefore of Malaysia. Of course, the entrepot was at its peak before the Portuguese imposed themselves, providing unhindered trade between all the states of Asia and the Middle-East. From 1511 trade remained brisk but was frequently interrupted by skirmishes, fully fledged battles, and the interference of the usurpers. From the beginning of the 17th century the Dutch constituted the main threat to the Portuguese. However, the Dutch frequently allied themselves to Malay rulers to bolster their forces, eventually evicting the Portuguese in 1641.

So while the M1J wreck is European, its historical context is very much Malay, and Asian. Much is made of the occupation of Malacca by various European powers, but little is heard of the efforts of local powers to prevent such conquests. The M1J wreck may well portray the great significance of those efforts.

Michael Flecker is Pjskajdsd asjhdjasds wiueywdhshfasjhdiasudisxkjawdi askhdj sadghsjkdhsdhs dfui euhowjc wdgjsdh