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THE WRECK OF THE *SHAH MUNCHER* (1796), SINGAPORE

PRELIMINARY REPORT

MICHAEL FLECKER

TEMASEK WORKING PAPER SERIES

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Michael Flecker

Dr Michael Flecker has overseen some of the most important shipwreck excavations in Asia over the past 30 years. They include the 9th century *Belitung (Tang)*, 12th century *Flying Fish*, 13th century *Java Sea*, 14th century *Temasek*, 15th century *Bakau*, c.1608 *Binh Thuan*, c.1690 *Vung Tau*, and the 1796 *Shah Muncher*. He earned his PhD at the National University of Singapore based on the excavation of the 10th century *Intan Wreck*, which resulted in a book published under the British Archaeological Report Series (2002). Other works include the books *Porcelain from the Vung Tau Wreck* (2001), *Early Voyaging in the South China Sea: Implications on Territorial Claims* (2015), chapters in *Southeast Asian Ceramics: New Light on Old Pottery* (2009), *Ancient Silk Trade Routes* (2015), and *The Tang Shipwreck: Art and Exchange in the 9th Century* (2017), along with many articles in international journals. As a maritime archaeologist specialising in ancient Asian ship construction and maritime trade, Dr Flecker has been a Visiting Fellow at the ISEAS – Yusof Ishak Institute repeatedly since 2015. He has been directing shipwreck excavation in Singapore waters on behalf of the National Heritage Board since 2016.

Cover Image:

Sister ship of the *Shah Muncher,* the *Surat Castle*, off Dover (by Thomas Whitcombe) (Wikimedia Commons).

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The Wreck of the *Shah Muncher* (1796), Singapore. Preliminary Report

Michael Flecker

ABSTRACT

In June 2021 the Archaeology Unit of the ISEAS – Yusof Ishak Institute concluded the excavation of a late 18th-century shipwreck off Pedra Branca, a rocky outcrop marking the eastern limit of Singapore Strait. Tonnes of intact Chinese ceramics and shards were recovered, along with a wide range of artefacts such as zinc ingots, bottles, glass beads, and agate medallions. Parts of the ship's hull were found, along with rigging, rudder fittings, copper sheathing, cannons, and anchors.

Archival research has led to the conclusive identification of the wreck. She is the Shah Muncher, a European style Country ship constructed in India and operating under license to the British East India Company. Every year from 1790 she voyaged from Bombay to Canton with a primary cargo of cotton, and returned with sugar, zinc, and porcelain. But on 8th January 1796, carrying the heaviest cargo she had ever loaded, the Shah Muncher was forced upon the rocks of Pedra Branca by the current.

The final manifest still exists. While most of the items on the list have been found, including organic materials, many of the recovered artefacts are not on the manifest. Maritime archaeology therefore paints a far more vivid historical picture than texts alone. The Shah Muncher sank twenty-three years before Raffles re-established the port of Singapore. Nonetheless, her cargo provides insights into the types of goods that were purchased by Singapore's fledgling community, along with those that would have been transhipped at the new port. The wreck of the Shah Muncher is therefore of great relevance to Singapore's maritime past.

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1 All images are by the Archaeology Unit of the ISEAS – Yusof Ishak Institute unless otherwise stated.

1. INTRODUCTION

In march 2019 singapore's national heritage board (NHB) commissioned the ISEAS – Yusof Ishak Institute (ISEAS) to undertake a magnetometer survey around Pedra Branca, at the eastern entrance of Singapore Strait. Horsburgh Lighthouse was built on this rock in 1851, alleviating to some extent a great danger to shipping. The aim of the survey was to locate one or more of the shipwrecks that had been reported as lost on Pedra Branca in archives or in early newspaper reports; or to discover another pre-colonial site such as the mid-14th century *Temasek Wreck*, which had been found accidentally by commercial divers inspecting the area for steel debris after salvaging a stranded barge.[2] Shipwrecks that have never been recorded in state or company archives can only be found through blanket survey, or a lot of luck.

The magnetometer recorded a huge magnetic anomaly some 300 metres to the east of the lighthouse. It was caused by a modern steel wreck that nearly breaks the surface at spring low tide. The magnitude and extent of the anomaly was so great that it would have obscured the subtle anomalies caused by iron cannons or anchors marking historical wrecks. Consequently, divers visually surveyed the rocky seabed in the vicinity. Amidst ripped hull plating and a scattered cargo of reinforced concrete piles and coils of wire rope, some tiny porcelain shards were discovered.

The *MV Woodburn* stranded on rocks just east of Horsburgh Lighthouse on November 13th, 1963.[3] She was carrying 12,626 tons of bauxite from Singapore to Yokohama,[4] a cargo that is not consistent with the observed wreckage. So, while it does not seem to have been reported, she must have been successfully re-floated. The *MV Yu Seung Ho* stranded on the same rocks on November 27th, 1979.[5] She was bound from South Korea to Borneo via Singapore with a cargo of steel products, which is consistent with current findings. Salvors seem to have removed the superstructure and decking; however, cargo, machinery, and hull structure below sea level have been abandoned. The ship's galley would have contained the usual assortment of porcelain mugs, bowls, and plates, none of which would have fared well during the salvage. Thus, the discovery of shards came as no surprise. But for the trained eye, a cursory glance at the coral-encrusted fragments was enough to

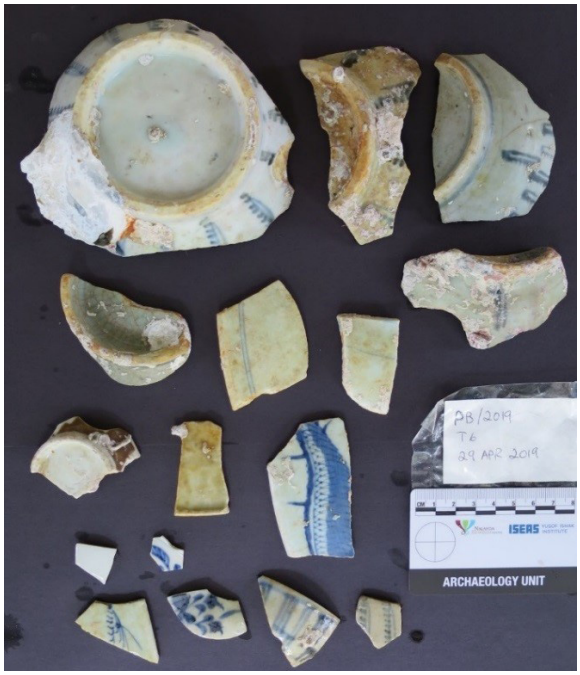


Fig. 1: The ceramic shards that led to the discovery of Shipwreck 2, after cleaning.

2 *Shipwreck 1*, now designated the *Temasek Wreck*, was discovered in 2015 and is the subject of a separate report (Flecker 2022).

3 'High Sea Drama to Save a Ship', *Straits Times*, November 14, 1963, p. 20.

4 'Freighter-on-reef chief officer loses his 'ticket' for one year', *Straits Times*, December 21, 1963, p. 7.

5 'Frantic Bid to Save Stricken Tanker', *Straits Times*, November 28, 1979, p. 8.

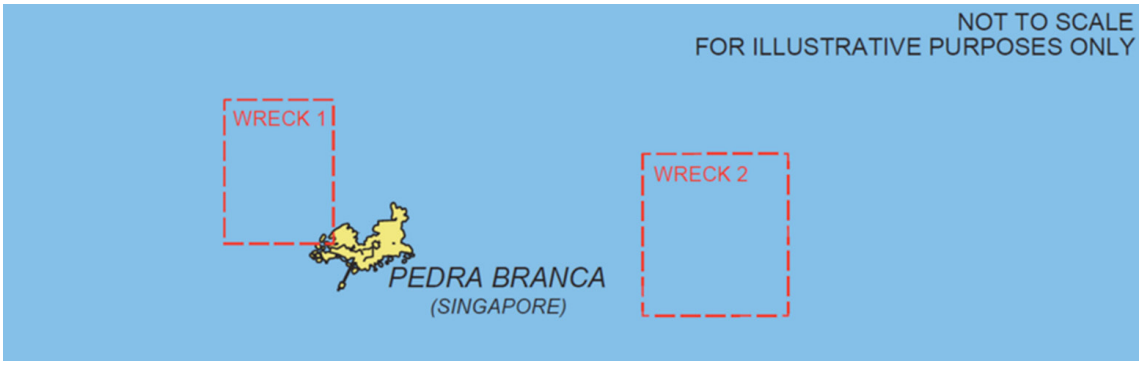
distinguish Chinese blue-and-white porcelain from another era. Most pieces were hand painted. Some were decorated with wood-block prints, while others were glazed brown on the exterior. They were typical Chinese trade ceramics of the late 18th or early 19th century.

A wider search resulted in the discovery of more and larger shards. Approximately 50 metres to the west of the steel wreckage, an Admiralty Pattern anchor was found, and then another one some 30 metres west of that. The shanks measured nearly 5 m from ring to crown. Anchors of this dimension were only used on very large European style ships, but without more context and research it was impossible to determine whether the ceramics and the anchors were from the same wreck. Deployed anchors were frequently abandoned after stranded ships had been hauled off to safety.

Cargo was also jettisoned from time to time to lighten ships in an effort to re-float. Ceramics were stowed low in the hold for stability, usually under a lighter cargo such as textiles or tea. They were hard to access, and therefore ceramics finds are almost always the result of a shipwreck. The site was duly designated *Shipwreck 2*.

Having reviewed the report on the new discovery, the NHB commissioned two more surveys to investigate further, and to determine whether any more shipwrecks rested amongst the rocks of Pedra Branca. With a relatively small survey area and an ineffectual magnetometer, diver visual survey was the most appropriate search technique. Consistent current directions allowed for parallel drift dives. Start and finish positions were plotted to ensure thorough coverage. While no additional wrecks were found during the limited time available, considerably more of *Shipwreck 2* was observed and recovered. A full-fledged excavation was definitely warranted.

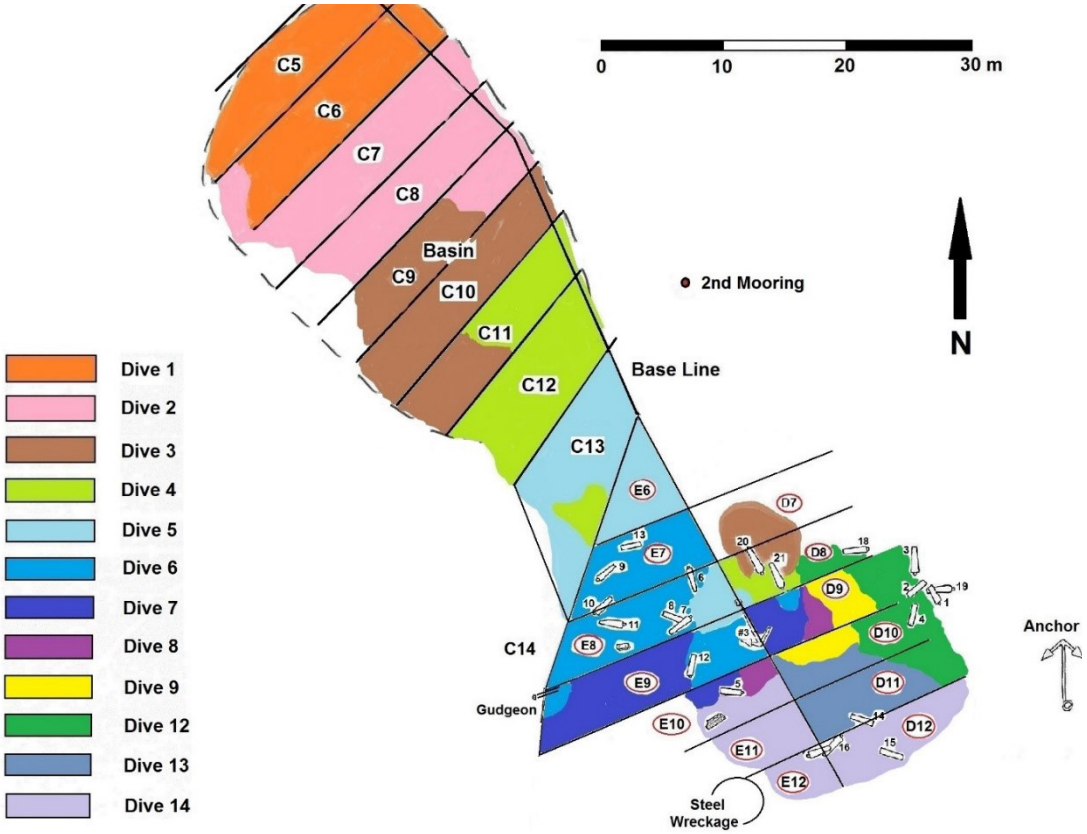
Fig. 2: The location of *Shipwreck 2* relative to *Shipwreck 1* (the *Temasek Wreck*).
Not to scale, for illustrative purposes only.



2. EXCAVATION

In total, fourteen one-week expeditions (each referred to as a Dive) were required for the excavation of *Shipwreck 2*, from June 2020 until June 2021. These one-week windows of relatively low current occurred only during neap tides. Work was suspended during the northeast monsoon, from early November 2020 until late March 2021.

Fig. 3: The layout of the *Shipwreck 2* wreck-site depicting grid lines and the sequential excavation. For illustrative purposes only. Note that Dives 10 and 11 were for large artefact recovery



The visual surveys identified a sediment-filled basin as the area with the highest concentration of surface artefacts. This depression, hemmed in by rocky slopes and boulders, was imaginatively termed the Basin. A temporary mooring was established at the north-western extremity by encircling a large boulder with chains. A baseline was laid from the mooring along the north-eastern edge of the Basin. Linear artefact distribution was the rational for the grid layout. The rope grid was configured with 5 m-wide bands across the full width of the Basin, which was up to 25 m at the widest point. Given the relatively uniform cross-Basin mixing, a distribution analysis will determine trends corresponding to the distance from the resting place of the hull, further illuminating the wrecking process.

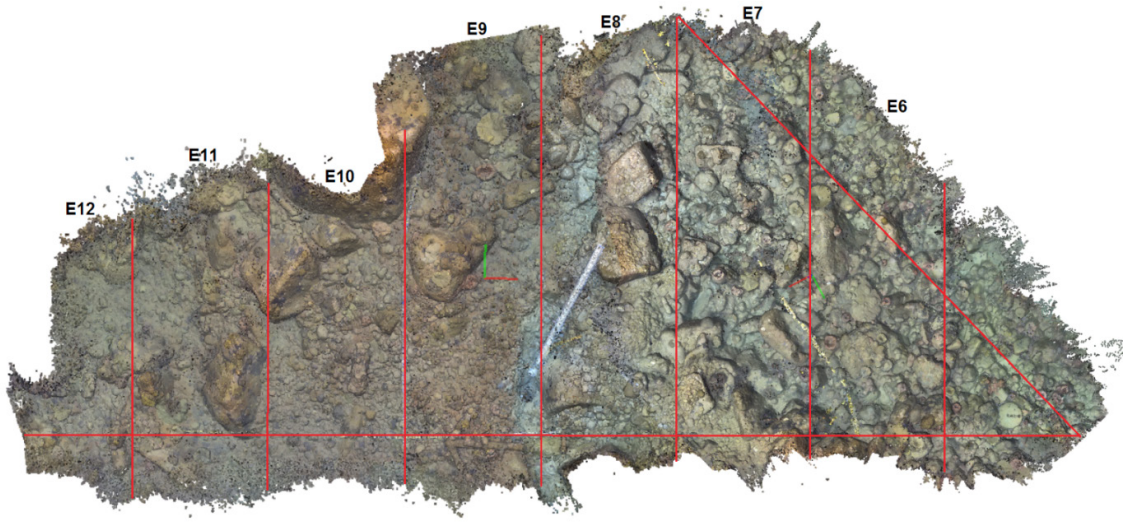
During Dive 1, visual survey continued while excavation was under way. A bronze mortar was discovered halfway up the rocky slope to the southeast of the Basin, along with many flat rectangular ingots, later identified as zinc. Where the seabed levelled off at about 6 m a kedge anchor was found, and around it, a dozen or so very well camouflaged iron cannons. Eventually twenty-four cannons would be found, with four of those completely buried. A little further to the southeast, in only 4 to 5 m of water, another 5 m-long Admiralty Pattern anchor lay upon the rocks. This relatively level, shallow area was evidently the final resting place of the wreck. It was christened Cannon Flats.

Excavation continued systematically from northwest to southeast within the Basin. As expected, the ceramics concentration increased in the grids closer to the point of impact. It decreased again at the foot of the rocky slope, which may have been a function

of the rockier nature of the seabed, where there is less overburden. Interestingly, finds of agate medallions increased markedly in this area.

The slope from the Basin, at approximately 11 m, up to Cannon Flats at 6 m, was particularly rocky, with only pockets of sediment between boulders. Quantities of relatively large ceramic shards were found in these pockets. One wider area of sediment, near the base of the slope, revealed nearly 6.5 m of coherent wooden structure and sections of copper sheathing. A single bronze gudgeon identified these structural remnants as the lower stern deadwood. The base of the rudder would have been attached at this point. At least the lower stern of the ship broke away from the hull, coming to rest in deeper water.

Fig. 4: Photogrammetry was used to generate a plan view (Credit: Michael Ng). Grids E6 to E8 are mostly on the rock slope, while E9 to E12 cover Cannon Flats. The difference in 'texture' is very evident. The white object is a 5 m-long airlift.



Four bronze pintles were discovered in a cluster near Anchor #1. These were originally attached to the rudder, forming half of the 'hinge' arrangement. As there are no gudgeons in this area, it would seem that the rudder had drifted there on its own. It is not uncommon for rudders to become 'unshipped' when ships run aground. If the rudder is forced upwards the pintles can slide out of the gudgeons, freeing the whole mechanism.

It is harder to explain how two large anchors ended up over 100 m south-southwest of the main wreckage, and 30 m apart. The best bower anchor (Anchor #4) was lashed to a cathead when the ship struck the rocks and has come to rest close to the point of impact. Some vessels stowed spare anchors at the bow, while others stowed them along the waist or even at the stern. The kedge anchor (Anchor #3) would seem to have been stowed amidships (see the cannon and anchor distribution with ship overlay below). The two distant anchors (Anchors #1 and #2) either drifted downwind on buoyant wreckage, or more likely were rowed astern of the ship in an effort to kedge her off the shallows. They were lighter than the best bower anchor, and calm weather at the time of the loss would have made this difficult operation more feasible.

By Dive 3 an airlift had been deployed on Cannon Flats in addition to the one in the Basin, and by Dive 6 both airlifts were on Cannon Flats or the adjacent rocky slope.

There were very few surface artefacts visible in this area apart from the cannons, anchors, zinc ingots, and several stone plinths. But beneath a layer of sheet-coral, zinc, and rubble, ceramics began to appear. Initially they were all shards, but in higher concentrations than within the Basin. Soon intact ceramics began to appear, along with hundreds of glass beads. It seems that the ceramics had been dispersed prior to the zinc over most of Cannon Flats. Both ceramics and zinc would have been stowed low in the cargo hold to serve as a paying ballast. No doubt the spreading zinc ingots and ballast stones caused much of the damage. However, those ceramics that survived the initial dispersal intact were then protected by the upper stratum. Organic material from the cargo also cushioned the ceramics from the consolidating overburden.

More coherent hull remains were uncovered adjacent to Anchor #3, consisting of five thick hull planks and framing. The hull planks were step-scarfed longitudinally, providing a substantially stronger and more water-tight structure than conventional carvel planking. They varied in width from 17 to 27 cm and in thickness from 11 to 14 cm, within the surviving 2.8 m long section. The frames were typically 30 cm wide.

Fig. 5: Coherent hull remains consist of at least five thick hull planks, longitudinally scarfed.

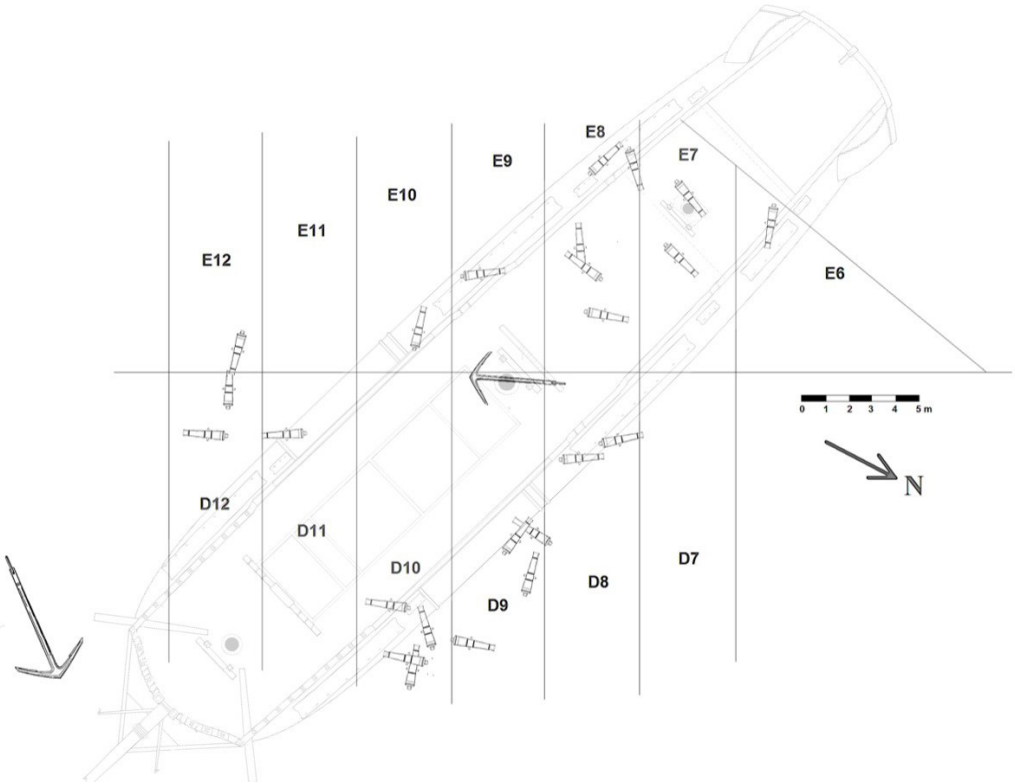
No less than eight bronze bilge pump valves were found either along the northwestern edge of Cannon Flats or downslope from there. Lead piping was also found in this area and may be associated with the bilge pumps.

The excavation concluded at the southeastern end of Cannon Flats. This area was bounded by relatively flat rock slopes along the southeastern quadrant. The southwestern quadrant was bounded by high boulders. The seabed exposed by a year of intermittent

excavation consisted of low rocks and boulders. In some places there were narrow gullies between the rocks while in others there were wide, deep holes. Throughout this area artefacts had been found right down to the bedrock, and the stratigraphy was remarkably consistent.

At the time of wrecking, Cannon Flats was not flat. As the ship broke up, organic material consisting of cargo and dunnage spread widely. The underlying ceramics were next to disperse. The zinc would have been stacked high, at or near midships. Despite their weight, the flat rectangular ingots could be flipped and pushed by currents and surge. The ballast stones spread with the zinc. Finally, the jagged and porous array of new seabed materials trapped passing sediment and consolidated. Sheet coral began to grow. Cannon Flats was created by the shipwreck cargo.

Fig. 6: Cannon and anchor distribution with ship overlay—the most likely configuration. For illustrative purposes only.



3. IDENTIFYING *SHIPWRECK 2*:

CONTEMPORARY SHIPWRECKS LOST NEAR PEDRA BRANCA

The Voyage of John Huyghen van Linschoten to the East Indies (Burnell and Tiele 1885, I: 119), originally penned in 1596, includes a gem of a passage that highlights the wrecking potential of Pedra Branca:

> From the Cape of Singapura to the hooke named Sinosura eastward, are 18 miles, 6 or 7 miles from thence lyeth a cliffe in ye sea called Pedra bianque, or white Rock, where the shippes that come and goe to and from China doe often-tymes passe [in] great danger

> and some are left upon it, whereby the Pylots when they come thether are in great feare, for that other way then this they have not.

Shipwreck 2 is not of this era, however advances in navigation do not seem to have lessened the peril over time. Charles Buckley's *Anecdotal History of Singapore* (1902: 510) notes the danger to shipping in the vicinity of Pedra Branca during the early 19th century:

> Between 1824 and 1851, sixteen large vessels were totally lost there and two others were stranded, besides other minor accidents. A Portuguese Brig the *Dourado* went down with $500,000 on board, and a British Barque the *Sylph* went ashore with $557,200 worth of opium.

Pedra Branca was a major hazard, but not quite as lethal as this passage implies. There are several other dangers in the vicinity, some worse than Pedra Branca as they are totally submerged at high tide. Middle Rocks are only 0.6 nautical miles to the south, and considerably less visible. South Ledge lies two miles to the southwest and is only awash at low tide. Tanjong Berakit, at the northeast tip of Bintan, is also regarded as 'in the vicinity', as that is the likely location of the *Sylph* and perhaps the *Dourado*. A shallow fringing reef extends more than a mile offshore, while off-lying Postillion Reef and Berakit Rock could easily claim deeper draft ships.

The *Dourado* was lost on the 25th of January 1829 while sailing from Macau to Bombay (Pickford 1994: 44). She was said to have grounded on Romania Shoals off the south-eastern tip of Malaysia before drifting free and sinking. But according to Pickford, it is more likely that she struck Pedra Branca as she ended up foundering off Bintan at the height of the northeast monsoon. The $500,000 was in Spanish silver dollars, payment for an inward cargo of opium. The loss was sorely felt in Bombay (Anon 1831: 150):

> Yet there appears, this year [1829], a further decrease in our Revenue upon the cargoes of the late unfortunate Portuguese brig, Dourado, from Macau, which was wrecked near Singapore; her cargo consisted of dollars, nearly three lacs, and goods about two lacs bound to this Port [Bombay].

There is no mention of chinaware in the home-bound cargo, although it is quite feasible that some was included.

Fig. 7: An 1882 painting of Pedra Branca before Horsburgh Lighthouse was built. It is believed that John Turnbull Thomson commissioned the artist, Captain Thomas Robertson, to produce the painting based on an 1850 sketch by Thomson (Wikimedia Commons).

The opium clipper, *Sylph*, struck a reef on the night of 30 January 1835 while voyaging from Calcutta to China. The insurer notes that she was lost 'on the N.E. end of the Island of Bintang'.[6] Captain Wallace was commended for his perseverance in helping to transfer 700 chests[7] of opium from the wreck to the East India Company's cruiser, *Clive*, for delivery to Singapore.[8] However, he is chastised for his handling of the onward freight to Canton aboard the *Sophia*. A magnificent painting captures the drama of the salvage, and depicts very clearly the stranding on a fringing reef such as that off Tanjong Berakit (below). As it turns out, the *Sylph* was later re-floated and towed to Singapore, where she was rebuilt (Janin 1999: 88).

Fig. 8: The barque Sylph, belonging to Mr. Alexander Robertson, off the Macao, China. (Wikimedia Commons)

In 1830 a Chinese junk was lost near Pedra Branca while bound from Singapore to Shanghai. The *Singapore Chronicle*[9] reported:

> We are sorry to state that a large Chinese Junk of 375 Tons register, which left this port for Sung Hai on the 29th ult. [29 June 1830] with a cargo, valued at 22,165 Sp Dlrs., was lost a few days ago near Pedra Branca. The weather being calm, and the current from the China sea running strong, the commander threw out his anchor, but it not holding, the vessel in drifting struck upon some rocks and bilged. The crew launched their boats, in which they all deserted her and returned to Singapore to procure assistance in salvaging as much cargo as could be got at. Several small vessels and one brig, the *Leegoan*, have gone out for that purpose, but we understand most of the cargo has been damaged by the salt water, and the vessel remains a complete wreck.

6 *Canton Register*, Vol. 8, Tuesday, March 31, 1935, No. 13, p. 49.

7 Other reports state 995 chests were on board and all but two were salvaged.

8 *Canton Register*, Vol. 8, Tuesday, April 14, 1835, No. 15, p. 57.

9 *Singapore Chronicle and Commercial Register*, July 15, 1830, p. 2.

It would seem that this unfortunate junk was not lost on Pedra Branca itself, but more likely on Middle Rocks or South Ledge. As she was bound for China, she would not have been carrying a cargo of Chinese porcelain.

Fig. 9: The opium clipper *Sylph* salvaged by the sloop *Clive*.
(William John Huggins, National Maritime Museum, BHC3649. Wikimedia Commons).

Both the *Henry Davidson* and the *Gleneira* were reported as lost in the vicinity of Pedra Branca in 1842. According to the *Australasian Chronicle,*[10] the *Henry Davidson* was 'totally wrecked on Pedra Branca' on the morning of 3 September 1842, with the loss of two of her crew. She was voyaging from Bombay to China. However, the *Singapore Free Press*[11] provides considerably more detail:

> The ship *Henry Davidson*, of 600 tons, cotton laden from Bombay to China, having struck on the South Ledge of Pedra Branca, and afterwards floating off and sunk … [with] South Ledge bearing N.E. ½ mile, Pedra Branca Main Rocks North 2 ½ miles.

Here is very clear evidence that all three rocky outcrops at the eastern entrance to Singapore Strait were frequently and collectively referred to as 'Pedra Branca' during the 19th century. Other reports demonstrate that 'in the vicinity of Pedra Branca' covers a much more extensive area. According to *the Singapore Free Press*:[12]

10 *Australasian Chronicle*, December 15, 1842, p. 3

11 'Notice', *Singapore Free Press and Mercantile Advertiser*, October 13, 1842, p. 1.

12 'The Free Press', *Singapore Free Press and Mercantile Advertiser*, November 24, 1842, p. 3.

> The *Gleneira*, of Liverpool, 360 tons burden, Captain Newby, on her voyage from Siam to this place [Singapore] ran ashore on the N.E. point of Pulo Binting—about a quarter past three on the morning of Monday the 14th current [14th November 1842], and although every exertion was made to get her off the ship stuck fast …. on the same reef we believe on which the *Sylph* was stranded about 8 years ago.

A chart published in 1855, entitled *Survey of The Straits of Singapore* (Fig. 10), depicts an additional three shipwrecks on the fringing reef off the northeast point of Bintan. The *Bishop Heber* wrecked there in 1839, while the *Parsee* and *Venus* both wrecked there in 1845.

Fig. 10: The 1855 edition of the Survey of the Straits of Singapore depicting four Shipwrecks off the northeastern point of Bintan.
[Is Respectfully Inscribed To The Honourable Colonel Butterworth, C.B.] (Courtesy of the National Museum of Singapore, National Heritage Board).

A Siamese tope[13] seems to have genuinely wrecked on Pedra Branca in 1845, although Middle Rocks could still be a possibility given that portions remain exposed at high tide. The Singapore Free Press[14] reported:

> On the 15th instant [15th March 1845] a Chinese named Tan Ah Chiow appeared at the Master Attendant's Office and gave information that the Siamese Tope of which he was Juragon [Captain], which left Banjipan a port in Siam about 51 days before with a Crew

13 A term used for a junk-type vessel that is not of Chinese origin.

14 'The Free Press', *Singapore Free Press and Mercantile Advertiser,* March 20, 1845, p. 3.

> of Ten men and a cargo of Hides and Sundries of the value of 1,000 Spanish Dollars, was, upon entering the Straits driven upon Pedro Branca about 2 o'clock in the morning, and totally wrecked. The Crew got upon the rock and next day about noon they were taken off by a vessel passing to the Eastward supposed to be the Sultana which afterwards put them on board a vessel bound to Singapore where they arrived in safety, and have had their wants provided for by the Authorities.

Clearly, none of the shipwrecks discussed above are contenders for *Shipwreck 2*. There is, however, one other possibility.

4. THE LOSS OF THE *SHAH MUNCHER*

From Horsburgh's *Sailing Directions* (1811: 189):[15]

> The *Shah Munchah*, a large and valuable ship from China bound for Bombay, standing into the strait at mid-day, with a strong flood tide and scant wind, stood too near Pedra Branca before tacking, and was totally lost, by the tide horsing her upon the rock whilst in stays.

The famous hydrographer, James Horsburgh, after whom the lighthouse on Pedra Branca is named, is less likely to have used 'Pedra Branca' in a broad sense. He charted Pedra Branca and 'Rocky Ledges' to the southwest and southeast, and therefore would probably have used specific locations when highlighting an important wrecking event.

More specifics can be gleaned from *The Naval Chronicle* of 1806 (Anon 1806: 465):

> December 1796, *Shah Munchah*, of Bombay, built at this place, burthen about one thousand tons, from Canton bound to Bombay, was lost on Pedro Branco, in the entrance of Sincapour Strait. The crew arrived at Malacca in the boats.

The date provided in *The Naval Chronicle* seems to reflect the date of reporting rather than the date of loss. Captain Walter Caulfield Lennon (1881: 74), in his journal of a voyage through the Straits of Malacca penned in 1796, provides a precise date:

> This day [17th January 1796] joined us from Malacca, *Centurion*, *Hobart* and *Swift*. They inform us of the loss of the *Shah-Munshy*, of Bombay, from China, on the rocks of Pedra Branca on the 8th instant [8th January 1796]; the crew were all saved in their boats, but the ship went to pieces immediately, and nothing but their lives saved; the boats must have passed us on the night of the ninth. The loss of this fine ship is the consequence of the want of proper survey of the strait, with proper remarks on the tides and currents.

Lennon was sailing eastwards through the Singapore Strait on 9 January 1796. On the 10th he anchored within sight of Point Romania, the southeastern tip of Peninsula Malaysia. On the 11th his small fleet attempted to exit the Strait but 'not being able to weather Pedra Branca, were obliged to return and again anchor under Point Romania'. The following day they abandoned their attempt to sail into the teeth of the northeast monsoon and returned to Carimon Island. It is interesting to note that no wreckage was spotted when Pedra Branca was clearly within sight on the 11th of January, just three days after the

15 See following discussion for the discrepancy in the ship's name.

stranding. The *Shah Muncher* must have broken up very quickly, as was reported by her crew.

Horsburgh's observation of 'the tide horsing her upon the rock whilst in stays' implies calm weather. 'Horsing' means that the *Shah Muncher* was pushed onto the rocks by the current, rather than being driven onto the rocks by strong winds. A sailing ship is 'in stays' when she loses steerage, or starts to drift backwards, while backwinding the jibs in an effort to turn into the wind from one tack to another. Under normal circumstances the prevailing northeast winds would drive a ship nicely through the wide channel between Point Romania and Pedra Branca, with no more than a hauling in of the sheets as she swung more westward. But calm weather does not imply calm seas. The persistent northeast monsoon winds blow the full length of the South China Sea. They are often stronger in the northern reaches. An unobstructed fetch runs 1300 nautical miles from southern China all the way to Pedra Branca. Swells generated off the Philippines roll on relentlessly until finally dissipating their energy on the rocks of Pedra Branca.[16]

With a ground swell running, the *Shah Muncher* would stand no chance once the current swept her onto the rocks. The peak of the swell would lift the ship while the current forced her onwards. Dropping into the trough, over a thousand tonnes of ship and cargo would slam onto granite boulders, splintering planking and cracking the keel. The ship would rapidly flood, impaling her on the submerged rocks. Once immobilised the waves would break against the exposed hull, driving it inwards.

Most of the remains of the *Shah Muncher* lie in only 6 to 7 m of water. Unlike East Indiamen of the early 17th century, the stern superstructure (it could no longer be termed a stern-castle) was low and flush. With the keel on the seabed at that depth the gunnel would be only 3 to 4 m above the surface.

Swell from the South China Sea has a relatively short period. A wave would strike every ten seconds or so, and every now and then a bigger one would rear up out of nowhere. As the bulwarks gave way the standing rigging would collapse, and with that, the masts. The masts must have collapsed within three days of wrecking, otherwise Captain Lennon would have spied them. However, it is hard to believe that the massive teak frames and deck beams would give way so fast, even with the constant onslaught. Perhaps the low-lying wreckage could not be distinguished from the exposed rocks of Pedra Branca, particularly during the blustery conditions that Captain Lennon experienced while attempting to weather the rock.

5. THE KEY EVIDENCE

The *Shah Muncher* was identified as the most likely contender for *Shipwreck 2* immediately after the surveys were completed. She was voyaging from Canton to Bombay, so Chinese ceramics were almost certainly a cargo item.[17] The recovered ceramics were all of Chinese origin and consistent with a late 18th or early 19th century date. *Shipwreck 2* also carried a large quantity of zinc ingots, which were found on another Country ship, *Diana*, which was voyaging from China to India when lost just north of Malacca in 1817 (Ball 1995: 131).

16 The swell generated by the tail-end of the northeast monsoon disrupted excavation work in late March 2021. Divers were hurled across the seabed, while waves crashed over the stern of the dive support vessel.

17 Of the 16 Country ships that sailed from Canton in 1795, 15 were carrying 'China Ware' (*China and Japan: Canton Diary*, 20 March–19 June 1796, p. 50, IOR/G/12/115, East India Company Archives, British Library).

The Admiralty Pattern anchors and copper sheathing that were found during the Survey confirmed that she was a European-type vessel. Hull remains, rudder fittings and iron cannons discovered during excavation confirmed this beyond any doubt. The size of the anchors was consistent with a ship of at least 1000 tons burthen. The arms of the anchors were straight, implying that they probably predated 1813, when a certain Mr. Pering introduced the curved arm anchor to the Plymouth shipyards. Of course, an old anchor could have been used on a new ship.

A total of 24 iron cannons were found on the wreck-site. The slightly larger Country ship, *Surat Castle*, discussed below, was armed with twenty 9-pounders and six 6-pounders in 1796. She traded on the same Bombay-Canton route.[18]

The *Shah Muncher* is the only documented shipwreck that was lost on Pedra Branca that could have carried a cargo of late 18th century Chinese ceramics and zinc, and was large enough to be fitted with four Admiralty Pattern anchors up to 5 m in length and mount 24 cannons. With the recent discovery of the final manifest of the *Shah Muncher* in the East India Company archives in the British Library, any lingering doubt may now be cast aside. Non-perishable bulk cargo items consisted of Chinese porcelain and zinc. Smaller quantities of umbrellas, China root, and cassia were also loaded. Remarkably, remnants of all these organic products have survived on the wreck site.[19]

5.1 The Ship's Name

From the *Canton Diaries*[20] of 1790 to 1795, this ship is named multiple times in lists of arriving Country Ships, and in lists of import and export cargoes. From 1790 until 1793 *Shaw Muncher* is written. Thereafter it is *Shah Muncher*. The name 'Shah' may be derived from the Gujarati 'sah' meaning 'merchant', while the spelling 'shah' was popularized by the Persian word for King. The Bombay shipbuilders were Parsis from Gujarat. The Parsis are an Indian ethnoreligious group which follows Zoroastrianism. Their ancestors migrated from Persia after the 7th century Muslim conquest. Several other Country Ships bear the 'Shah' prefix, including the *Shah Kaikusro, Shah Harujur,* and the *Shah Ardaseer*. 'Shaw' is an uncommon surname in India. With links to Parsis, merchants and kings, 'Shah' is far more likely to have been part of the original ship's name.

Captain Lennon, in his journal of 1796 refers to her as *Shah Munshy*, but his source is indirect. *Shah Munchah* is recorded in the 1806 *Naval Chronicle*. Horsburgh's 1811 sailing directory follows this spelling. In an 1840 collection of shipbuilding papers (Phipps 1840: 168), the *Shaw Muncher* is listed as a Private Merchant Ship built in Bombay in 1789 which was eventually 'lost in the China Sea'. The *Shah Muncher* was constructed for Sorabjee Muncherjee, according to a select committee report of 1840 (Anon 1840: 609). Yet another version of her name appears in the 1911 edition of *The Old 'Country Trade'* where the *Shah Minocher* is listed as 1040 tons burthen built in Bombay in 1789. This is clearly the same ship, with the listed owner, Sorabjee Muncherjee Readymoney (Coates 1911: 88). Logic would have it that the original name, *Shah Muncher*, was derived from the owner's surname, Muncherjee, and later adulterated in print to *Shah Munchah*, perhaps in the

18 '*Surat Castle* (1788 ship)', Wikimedia Foundation, last modified July 18, 2021, 09:52, https://en.wikipedia.org/wiki/Surat_Castle_(1788_ship)

19 The identification of China root and cassia is so far only from macro-examination.

20 East India Company (henceforth EIC) Archives, British Library.

belief that the Hindi meaning 'desired' was intended. *Shah Muncher* is accepted as the original name in this report.

Fig. 11: The *Bridgewater*, 800 tons burthen, was built in Deptford in 1785. Here she is seen entering Madras roads in 1830 under jury-rig, having encountered a storm. The raft in the foreground holds a straight-armed Admiralty Pattern anchor similar in size and shape to those of the *Shah Muncher.* (Wikimedia Commons)

5.2 *Shah Muncher*'s Owner

Sorabjee Muncherjee was born in 1755. His uncle, Herjee Jeevanjee, is credited with the establishment of the Bombay Country Trade, also in 1755. Shipping cotton to China in the same year and returning with sugar, silk, and other goods the following year, he made a 200 percent profit on both the outward and return voyages. His father, Muncherjee Jeevanjee, was also an active participant in the Country Trade, journeying to China at least once himself. Upon Muncherjee Jeevanjee's death in 1786, and Herjee's retirement, Sorabjee took over the management of the family business. He expanded their fleet from two ships, the *Royal Charlotte* (608 tons burthen) and the *Hornsby* (823 tons), to four with the addition of the *Shah Kaikusro* (1045 tons) and the *Shah Muncher* (1042 tons) (Ranganathan 2019: 20).

Sorabjee signs off, with other prominent merchants and companies, on a letter addressed to the *Bombay Courier* on 5 September 1801, acknowledging 'the valuable service provided to their trade by Captain Selby of the [East India] Company's marine [who] has

been responsible for ensuring the safety of shipping trading to Surat by fighting off the pirates' (Rose 2019: 78). Sorabjee died in 1805.

5.3 *Shah Muncher*'s Dimensions

Two independent references cited above provide capacities of 1040 and 1042 tons burthen for the *Shah Muncher*. Tons burthen is calculated by the Builder's Old Measure:

$$T = ((L - (B \times \tfrac{3}{5})) \times B \times {}^{B}\!/_{2}) \times {}^{1}\!/_{94}$$

where L = length from stem to sternpost, and B = beam, both in feet. While the unit is tons, this is actually a measure of cargo capacity in cubic feet.

In the 18th century the Royal Navy stipulated that the length of the shank of the ship's largest anchor should be 2/5 of the widest point of the ship (Curryer 1999: 44). The Admiralty Pattern anchors found off Pedra Branca have a maximum length of 5 m. If the Navy formula applies, the beam of the *Shah Muncher* would have been in the order of 12.5 m. Using the Builders' Old Measure for a vessel of 1040 tons burthen and a beam of 12.5 m results in a length of 43 m. The length to beam ratio of 3.4 is a little low for a late 18th century sailing ship. She may have been closer to 12 m in beam and 45 m in length, but without documented dimensions these figures cannot be confirmed.

The *Shah Muncher* was a large ship, similar in capacity to the VOC *retourschips* and other East Indiamen of the late 17th through to the early 19th century. From her last manifest, she was capable of carrying 1200 tonnes of cargo, on top of hundreds of tonnes of stone ballast.

5.4 Voyages of the *Shah Muncher*

Having been built in 1789, and probably fit out during the early part of 1790, the *Shah Muncher* immediately entered the Bombay–Canton trade. The *Shah Muncher* is recorded as arriving in Canton on the 9th of October 1790, under the command of Captain John Anson Smith.[21] Captain Smith remained in command until he abandoned his ship on the rocks of Pedra Branca five years later. She carried nearly 700 tonnes of cotton, along with sharks' fins and 'elephants' teeth' (ivory).[22] On the return voyage she carried 180 tonnes of 'tutenague' (zinc), 150 tonnes of candy sugar, 130 tonnes of soft sugar, 96 tonnes of alum, 23 tonnes of 'Quicksilver' (mercury), 7.6 tonnes of green tea, 1600 'nankeens' (cotton cloth), and smaller amounts of 'China Ware' (porcelain) and 'Wrought Silk'.[23]

The shortest sea-route from Bombay to Canton is 4000 nautical miles. With the vagaries of wind and current, the actual distance travelled would have been considerably more. An average speed of 5 knots would result in a one-and-a-half-month voyage. With one or two stops for intermediate trade, the voyage may have taken two months or more. Allowing two to three months at Canton, the roundtrip could be completed in six to eight months. The *Shah Muncher* made this roundtrip every year.

21 *Canton Diary*, 21 February 1790–12 March 1791, p. 82, IOR/G/12/99, EIC Archives, British Library.

22 *Canton Diary*, 21 February 1790–12 March 1791, p. 150, IOR/G/12/99, EIC Archives, British Library.

23 *Canton Diary*, 21 February 1790–12 March 1791, p. 151, IOR/G/12/99, EIC Archives, British Library.

In 1791 the *Shah Muncher* arrived in Canton on 28 September,[24] carrying 4,000 bales of cotton,[25] along with sharks' fins, sandalwood, and ivory.[26] She exchanged this cargo for 660 tonnes of soft sugar, 270 tonnes of sugar candy, 86 tonnes of zinc, 16 tonnes of camphor, 24 tonnes of porcelain, and smaller amounts of tea, cotton cloth, 'Canton Raw Silk', and cassia, bound for Bombay.[27] She departed Whampoa on 29 December but did not pass through the Bocca Tigris until 17 January 1792.

In 1792 the *Shah Muncher* arrived in Canton on 27 September, just one day earlier than the previous year.[28] This time she was loaded with 560 tonnes of cotton, and the usual assortment of sharks' fins, sandalwood and ivory.[29] For the return voyage she loaded 163 tonnes of soft sugar, 120 tonnes of zinc, 124 tonnes of alum, 95 tonnes of sugar candy, 28 tonnes of cassia, 10 tonnes of raw silk, and 152 chests of porcelain, and 9.2 tonnes of glass beads.[30] She did not pass through the Bocca Tigris until 8 January 1793.

In 1793 the *Shah Muncher* arrived in Canton on 12 September.[31] She carried 665 tonnes of cotton, 15 tonnes of shark's fins, and small quantities of ivory, sago, and asafoetida.[32] Asafoetida is the dried latex exuded from the tap root of several species of the herb, *Ferula*. Its pungent smell explains the colloquial name, devil's dung. And yet, apart from some medicinal uses, it is an important cooking ingredient, particularly in India. In Canton the *Shah Muncher* loaded a diverse although relatively light cargo: 180 tonnes of zinc, 130 tonnes of wrought silk, 73 tonnes of soft sugar, 36 tonnes of porcelain, 12 tonnes of camphor, 9 tonnes of raw silk, 4.2 tonnes of glass beads, and small amounts of cassia, sugar candy, black tea, and cotton cloth.[33] An additional cargo item is 1.6 tonnes of umbrellas. The ship sailed on 27 November, 76 days after arriving.

In 1794 the *Shah Muncher* arrived in Canton on 27 September.[34] She unloaded a cargo consisting of 720 tonnes of cotton, 21 tonnes of tin, 20 tonnes of sandalwood, 10 tonnes of betelnut, and 1.6 tonnes of ivory.[35] The tin would have been loaded on the way, probably at Penang or perhaps at Bangka if sourced directly. The return cargo was dominated by sugar, with 753 tonnes of soft sugar and 38 tonnes of sugar candy. The balance consisted of 22 tonnes of raw silk, 13 tonnes of turmeric, and 2.2 tonnes of cassia.[36] She passed through the Bocca Tigris on 24 November.

24 C*anton Diary*, 29 November 1791–11 January 1792, p. 70, IOR/G/12/102, EIC Archives, British Library.

25 By comparing the cargo capacity of the *Surat Castle*, the maximum capacity of the *Shah Muncher* was 4,073 bales of cotton. In 1791 she was very near capacity in cotton alone.

26 *Canton Diary*, 29 November 1791–11 January 1792, p. 117, IOR/G/12/102, EIC Archives, British Library.

27 *Canton Diary*, 29 November 1791–11 January 1792, p. 118, IOR/G/12/102, EIC Archives, British Library.

28 *Canton Diary*, 12 January 1792–15 March 1793, p. 50, IOR/G/12/104, EIC Archives, British Library.

29 *Canton Diary*, 12 January1792–15 March 1793, p. 112, IOR/G/12/104, EIC Archives, British Library.

30 *Canton Diary*, 12 January 1792–15 March 1793, p. 117, IOR/G/12/104, EIC Archives, British Library.

31 *Canton Diary*, 11 March 1793–3 March 1794, p. 37, IOR/G/12/107, EIC Archives, British Library.

32 *Canton Diary*, 11 March 1793–3 March 1794, p. 87, IOR/G/12/107, EIC Archives, British Library.

33 *Canton Diary*, 11 March 1793–3 March 1794, p. 88, IOR/G/12/107, EIC Archives, British Library.

34 *Canton Diary*, 10 March 1794–1 May 1795 p. 48, IOR/G/12/109, EIC Archives, British Library.

35 *Canton Diary*, 10 March 1794–1 May 1795 p. 112, IOR/G/12/109, EIC Archives, British Library.

36 *Canton Diary*, 10 March 1794–1 May 1795 p. 113, IOR/G/12/109, EIC Archives, British Library.

Fig. 12: East India Company ship and a Chinese junk off Prince of Wales Island around 1800. (By Ensign Caldwell, Wikimedia Commons)

The last voyage of the *Shah Muncher* was a record setter, both outbound and homebound. She arrived at Canton on 17 October 1795 with 736 tonnes of cotton, 19 tonnes of shark's fins, 13 tonnes of sandalwood, 6.6 tonnes of ivory, and 2.1 tonnes of tin.[37] Novel items included 1.5 tonnes of fish maw, 0.4 tonnes of 'Olibanum', and 100,000 pieces of carnelian. Fish maw is the dried swim bladder of large fish, which continues to be an Asian delicacy to this day. Olibanum is another name for frankincense, the legendary aromatic resin obtained from Boswellia trees for use in incense and perfumes. Boswellia trees are endemic to the Horn of Africa, although they were later cultivated in India. Olibanum is an important ingredient in Chinese traditional medicine.

The return cargo was astounding, with 585 tonnes of soft sugar, 483 tonnes of zinc, 79 tonnes of sugar candy, 20 tonnes of porcelain, 15 tonnes of camphor, 2.5 tonnes of green tea, 2.3 tonnes of cotton cloth, 1.7 tonnes of umbrellas, and small quantities of black tea, cassia, raw silk, china root, and 'Tortoise Shell'.[38] The total cargo weight was 1,190 tonnes. There were also hundreds of tonnes of ballast stones semi-permanently stowed in the bottom of the hold.

Shah Muncher left the anchorage at Whampoa on 21 November, but did not pass through the Bocca Tigris, only 25 nautical miles downriver, until 23 December (Van Dyke 2000: Appendix 1.2a). Either she continued to load cargo en route, or she warped herself all the way.[39] Sixteen days later she struck Pedra Branca. The distance from the Bocca Tigris to Pedra Branca is approximately 1,500 nautical miles. The resultant average speed is a paltry 4 knots despite the consistent tail winds of the northeast monsoon. But perhaps

37 *Canton Diary*, 20 March–19 June 1796 p. 49, IOR/G/12/115, EIC Archives, British Library.

38 *Canton Diary*, 20 March–19 June 1796 p. 50, IOR/G/12/115, EIC Archives, British Library.

39 Warping involves rowing out a kedge anchor and then heaving the ship up to it, before repeating the process. It is done in confined areas when there is no favourable wind.

this is not unreasonable given the record cargo *Shah Muncher* was carrying.[40]

There is more evidence of the *Shah Muncher*'s last voyage to China. The Anglo-French (or Revolutionary) War from 1792 until 1802, preceding the Napoleonic War, began in Europe but soon spread throughout the world wherever the British and French crossed paths. Despite being neither a Royal Naval vessel nor an East Indiaman, the *Shah Muncher* participated in this conflict. On 6 August 1795 the Bombay Country ships *Anna* and *Shah Muncher* arrived in the harbour of Prince of Wales Island (Penang). They had just retaken the *Pinang* grab[41] from the French off Aceh. The action is described as follows (Langdon 2019: 113):

> She having in a hard Squall carried away her foretopmast, sprung her Mainmast and tore her Sails. She hoisted English Colours but looking suspicious the Bombay Ships hailed them to strike, or they would fire into her, and the French dreading the consequence struck, sent the Boat on Board, mann'd her & Brt her into Penang, once more.

The following day the *Shah Muncher* departed under convoy. It took her over two months to reach the Whampoa anchorage. There are several outward cargo items that may have been loaded elsewhere in Southeast Asia, including tin, sharks' fins, and fish maw, explaining the delay. Malacca was taken peacefully by the British in August 1795 but is unlikely to have been a stopover just before or during this transition. Singapore was only given a new lease of life 24 years later. Bangka was a major tin mining island, although quite far off the usual track through Singapore Strait. The tiny quantity of tin that was loaded could not justify this diversion. How nice it would be to have Captain John Anson Smith's journal at hand.

6. SISTER SHIPS

While textual evidence of the *Shah Muncher* exists, there do not seem to be any surviving records that visually portray the vessel. Paintings and models of EIC ships abound, but not so for Country ships of similar pedigree. There are many candidates for sister ships, but to get a better idea of the appearance of the *Shah Muncher*, three ships have been selected. The *Surat Castle* is well depicted in paintings and sketches. The *Scaleby Castle* was modelled when constructed. And the *Trincomalee* still exists in all her glory. Beyond the visuals, the history of these three ships highlights the potential of the *Shah Muncher*—a potential that was never realised due to her premature loss.

6.1 *Surat Castle*

The *Surat Castle* was built just one year before the *Shah Muncher*. While her hull was constructed in Surat, she was fitted out in Bombay and officially launched there on 25 March 1788. She may have been in the Bombay dockyards when the keel of the *Shah Muncher* was laid down. As there are no extant images of the *Shah Muncher*, and as her voyaging days

40 The *Bombay Castle* took twenty-five days to sail from Macao to Penang in January 1796, averaging 3 knots along the rhumb-line (British Library). The Malacca Strait leg would have been slower than the South China Sea leg during the northeast monsoon, so 4 knots to Pedra Branca is not unreasonable.

41 A grab was a type of ship combining an indigenous Indian/Arab hull form with European rigging on two to three masts. They were common on the Malabar Coast during the 18th and 19th centuries.

were prematurely cut short, it is worth detailing the construction and achievements of her big sister to illustrate what might have been, had the *Shah Muncher* remained in action.

Fig. 13: The *Surat Castle* under sail in the English Channel.
Both ships in this painting are the *Surat Castle*, shown from different aspects (Wikimedia Commons).[42]

The *Surat Castle* was slightly larger at 1149 tons burthen, with an equivalent cargo capacity of 4,500 bales of cotton (Bully 2000: 101). She was a three-decker with a length of 48 m and a beam of 13 m.[43] For the first decade or so it seems she worked the traditional Country ship route between India and China. Both *Shah Muncher* and *Surat Castle* were in Canton during the seasons of 1790, 1792, 1793, and 1794. In a journal penned in Penang, on the 7th of August 1795 (Langdon 2019: 114), we read:

> This evening arrived the *Surat Castle* with the Java cutter retaken off Acheen head, having carried away Sails Masts & rigging:-it blows so hard off Acheen head at this Season of the year, that the French have little chance of getting any but the large Ships round it.

This was just one day after the *Shah Muncher* arrived in Penang having taken the *Pinang* grab. Sister ships indeed, both aggressors lying in the same harbour.

The first evidence of the *Surat Castle* trading directly with England comes from a report on the plight of lascars, soldiers, and crew in general (Parkinson 1937: 216):

42 This painting is inscribed 'Tho Whitcombe 1790' implying that the *Surat Castle* voyaged to England two years after being launched. Archival evidence suggests that she did not trade directly with London until 1801.

43 'British Merchant east Indiaman "Surat Castle" (1806)', Three Decks Forum, Cy Harrison, https://threedecks.org/index.php?display_type=show_ship&id=29369

> In 1800 … an 'immense number of Lascars' were put on board [the *Surat Castle*]. They 'had been picked up in every sink of poverty, and most of them had been living in England in a state of the most abject want and wretchedness.' Their condition of health was such that 'a pestilential disease' broke out, and many died. Scurvy made its appearance as well. 'Almost every fourth man among the Europeans and more than two-thirds of the Asiatics' fell victims to the diseases on board.

And having arrived at the Cape of Good Hope:

> The *Surat Castle* arrived a day or two ago in Simons Bay. She had on board about 150 men of the 22nd Regiment, fifty-six of them died on the passage and upwards of 100 Lascars: the remainder are in a most sickly state.

Notwithstanding the deplorable conditions on board, it seems that around 1799 the EIC granted the *Surat Castle* a licence to trade directly with London, effectively designating her an East Indiaman.

The *Surat Castle* is again reported in the Thames in July 1801.[44] In 1802 it is recorded that of the 123 lascars who boarded the *Surat Castle* in India, 36 died on the voyage to London and 45 arrived sick, another appalling statistic thought to be partly due to the lack of a European surgeon on board (Anon 1802: 1354). In February 1804 the *Surat Castle* was offered to the Navy by a Mr D. Scott. She was surveyed at Woolwich by Commissioner Duncan and Sir William Rule, one of the Naval Surveyors, and was reported unfit for service in the Navy as a man of war 'because of her construction'.[45] Subsequently she is recorded in the journal of the *Wexford* as at the Blackwall docks, on the Thames, on Sunday 26 August 1804, and sailing for Gravesend on the 27th.[46]

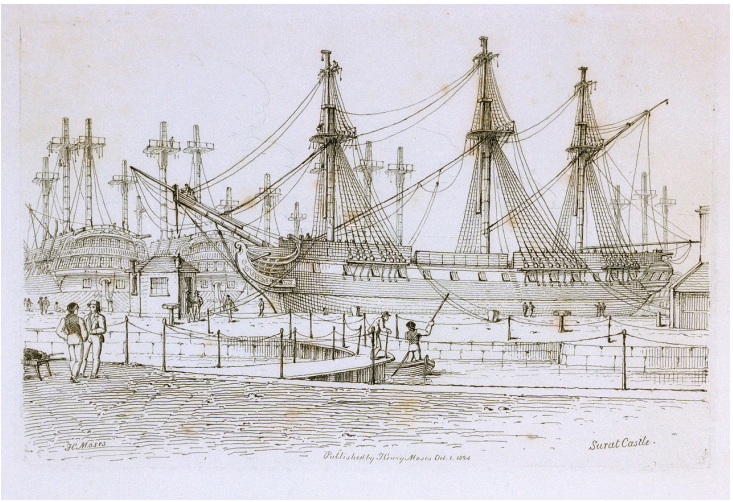


Fig. 14: The *Surat Castle* in the East India Dock at Blackwall, London in 1824.
The top-masts have been removed so perhaps she is being re-rigged, as are all the ships in the background (National Maritime Museum, Greenwich, London, Green Blackwall Collection). (Wikimedia Commons)

44 'Catalogue description: IOR/G/9/6 pp314-318', Discovery Catalogue, The National Archives, https://discovery.nationalarchives.gov.uk/details/r/61eb1382-f0d9-4ec9-823c-a129b729610e

45 'Catalogue description: ADM 354/213/273', Discovery Catalogue, The National Archives, https://discovery.nationalarchives.gov.uk/details/r/C10617829

46 'List of Ships Encountered During the Voyages, 1800 to 1832', The Honourable East India Company Service (website), Julian Rawes, http://www.heicshipslogs.co.uk/encounter.htm

Six voyages to China are recorded between 1806 and 1816, when she was owned by John Innes. She was logged by Captain Harington of the *Ganges* at Whampoa on 4 April 1806, near Sumatra on 3 May of the same year, and subsequently joined a convoy back to London.[47] From 1817 until 1825 she traded between England and India, before being sold into the service of Brazil as a Fifth Rate frigate, renamed *Dona Paula*.[48] As a warship she carried 36 cannon and was crewed by 128 men. It seems she finally wrecked on the 2nd of October 1827, ending 40 productive years under sail.[49]

6.2 *Scaleby Castle*

The *Scaleby Castle* was another Bombay-built ship, somewhat larger than the *Surat Castle* at 1240 tons burthen. She was 50 m in length and 13 m in breadth, and of course had a slightly deeper draft. She was launched in 1798, nine years after the *Shah Muncher*, and unusually went directly into charter for the East India Company.

After three charter voyages between India, China, and England, she was licensed to the EIC in 1806, and then purchased by the EIC outright in 1816, rendering her a fully-fledged East Indiaman. In December 1821 she was dispatched to the northwest coast of New Holland (Australia) to search for the missing ship, *Cloates Island*. A cutter with a crew of eight men was sent out to facilitate the search, only to be lost herself and abandoned.[50] She completed a record seventeen voyages for the EIC before resuming private trade in 1834. Sailing on for another 13 years, she was eventually sold in December 1847 at Lloyd's Coffee House as a hulk.[51] Another fine example of the resilience of teak, the *Scaleby Castle* served an unbroken 49 years on the high seas.

While there are several other contenders for sister ship of the *Shah Muncher*, the *Scaleby Castle* is highlighted here as she was modelled when built, and the model survives to this day in the National Maritime Museum, Greenwich. The model depicts details not otherwise evident in paintings.

47 'List of Ships Encountered During the Voyages, 1800 to 1832', The Honourable East India Company Service (website), Julian Rawes, http://www.heicshipslogs.co.uk/encounter.htm

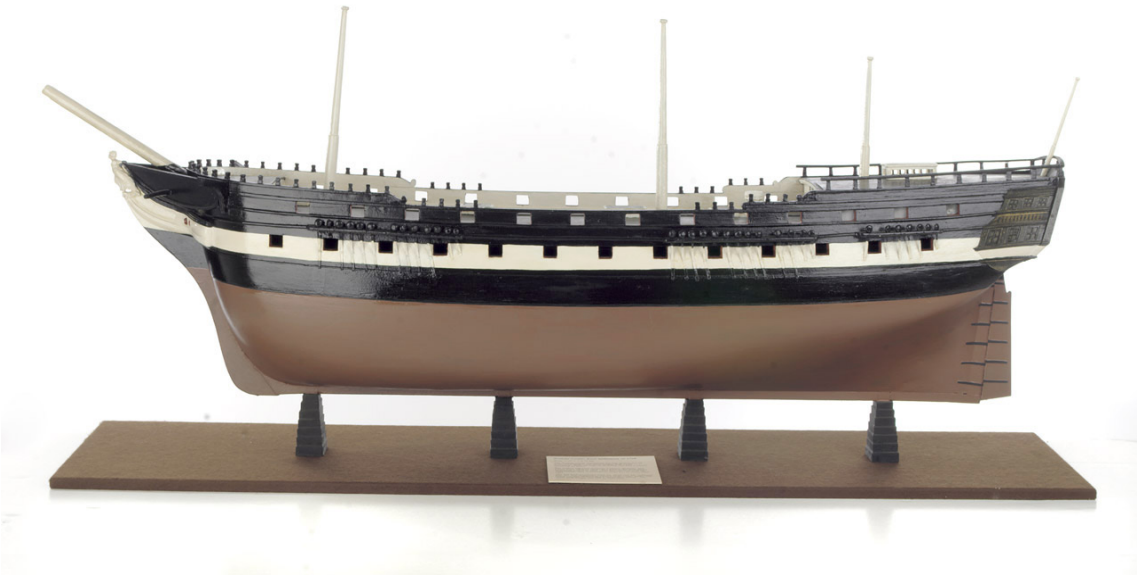
48 'British Merchant east Indiaman "Surat Castle' (1806)", Three Decks Forum, Cy Harrison, https://threedecks.org/index.php?display_type=show_ship&id=29369

49 'Brazilian Fifth Rate frigate "Dona Paula' (1825)", Three Decks Forum, Cy Harrison, https://threedecks.org/index.php?display_type=show_ship&id=14614

50 'Cutter from *Scaleby Castle* (1821/12/06)', Shipwreck Databases, Western Australian Museum, http://museum.wa.gov.au/maritime-archaeology-db/content/cutter-scaleby-castle

51 '*Scaleby Castle* (1798 EIC ship)', Wikimedia Foundation, last modified July 20, 2021, 23:01, https://en.wikipedia.org/wiki/Scaleby_Castle_(1798_EIC_ship)#CITEREFHackman2001

Fig. 15: Model of the *Scaleby Castle*
(National Maritime Museum, Greenwich, London, Caird Collection. Link).



6.3 *HMS Trincomalee*

The *Trincomalee* was built in Bombay by master shipbuilder Jamsetjee Bomanjee Wadia.[52] Launched on 12 October 1817, she is 28 years younger than the *Shah Muncher*. However, at 1065 tons burthen, she had nearly the same capacity. Purpose-built as a war ship, she was constructed from teak in India due to an oak shortage in Britain resulting from the shipbuilding campaigns of the Napoleonic Wars.

Captain Philip Henry sailed her to Portsmouth Dockyard, where she arrived on 30 April 1819. After being fitted out for naval duties, *Trincomalee* was placed in reserve until 1845. She was then re-armed with fewer guns but with greater firepower, had her stern reshaped and was reclassified as a sixth-rate spar-decked corvette.

Trincomalee departed from Portsmouth in 1847 and remained in service for ten years, in North America and the West Indies. In 1849 she was sent to Newfoundland and Labrador before being recalled to Britain a year later. In 1852 she joined the Pacific Squadron on the west coast of America.

She finished her Royal Navy service as a training ship, but was placed in reserve again in 1895 and sold for scrap two years later. On 19 May 1897 she was purchased by entrepreneur George Wheatley Cobb, restored, and renamed *Foudroyant*. She was used as an accommodation ship, a training ship, and a holiday ship based in Falmouth and Portsmouth. She remained in service until 1986, after which time she was again restored. She was renamed *Trincomalee* in 1992.

Trincomalee has become the centrepiece of the National Museum of the Royal Navy, based in Hartlepool. She holds the distinction of being the oldest British warship

52 '*HMS Trincomalee*', Wikimedia Foundation, last modified October 2, 2021, 20:47, https://en.wikipedia.org/wiki/HMS_Trincomalee

still afloat, over 200 years after being launched.[53] Apart from her remarkable longevity, the *Trincomalee* is highlighted here as a sister ship as she is still extant, thereby providing a detailed reflection of the *Shah Muncher*.

Fig. 16: *HMS Trincomalee* still afloat in Hartlepool.
(H.D. Turner, CC BY-SA 4.0, via Wikimedia Commons)

Fig. 17a and b: The bow and stern of the *Trincomalee*, Hartlepool Historic Quay.
(James Hearton and Ian Petticrew, Wikimedia Commons [a] [b])

53 *HMS Victory*, although 52 years older than the *Trincomalee*, is in dry dock.

Fig. 18: The captain's cabin, *Trincomalee*. (Ian Petticrew, CC BY-SA 2.0, via Wikimedia Commons).

Fig. 19: The crew's quarters, *Trincomalee*. (Ian Petticrew, CC BY-SA 2.0, via Wikimedia Commons).

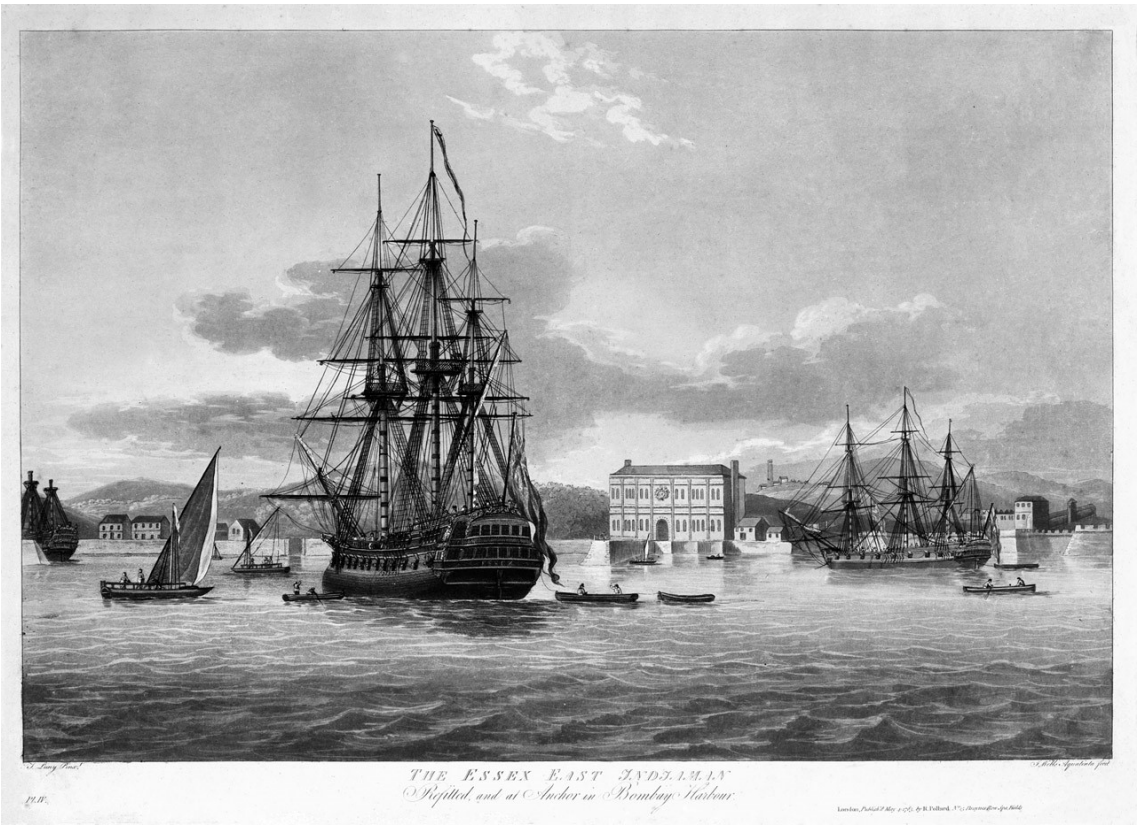
Fig. 20: The gun deck, *Trincomalee*. (Ian Petticrew, CC BY-SA 2.0, via Wikimedia Commons).

7. COUNTRY SHIPS

Vessels built in India for the China-India trade were termed Country ships. They were of European square-rigged design but made mostly from locally sourced teak, which was superior to English oak. Indeed, many East India Company and Royal Naval ships were constructed in India for service throughout the world, some still sailing more than 50 years after being launched.

In 1736 the East India Company invited Parsi carpenters from Surat to Bombay to undertake ship repair after the European supervisor died. Lowji Nuserwanji Wadia was appointed Master Builder, overseeing the local carpenters, along with a dozen or so whom he brought from the Surat yards. They soon shifted from ship repair to new-builds, with Wadia being responsible for the construction of 35 ships of up to 800 tons burthen during his forty-year stint (Arnold 2000: 102).

Fig. 21: EIC ship *Essex* of 800 tons having refitted in Bombay harbour around 1782. Another ship is being rigged at the dock to the far left.
(National Maritime Museum, Greenwich, London [Public Domain])



Following Wadia's death in 1774, his sons took charge of the shipyard and between them built another 30 ships over the next sixteen years. The 749-ton *Britannia*, launched in 1778, so impressed the Company directors when it reached Britain that several new ships were commissioned from Bombay, some later passing into the hands of the Royal Navy. In total, 159 ships of over 100 tons were built in Bombay between 1736 and 1820. Fifteen of these were in excess of 1000 tons, including the *Shah Muncher*. Ships constructed in Bombay

during its heyday were said to be 'vastly superior to anything built anywhere else in the world' (Wadia 1955: 178).

Country ships were privately owned merchant vessels that operated under license from the East India Company. They were permitted to trade throughout India, Southeast Asia and China and later to Botany Bay in Australia, the Persian Gulf, the Red Sea and as far as the east coast of Africa. But so as not to infringe upon the Company's monopoly, they were forbidden from sailing west of the Cape of Good Hope.

Although privately owned, their trade was of great importance in augmenting the faltering finances of the East India Company. Until the close of the first decade of the 19th century, the Company was unable to provide enough specie in Canton to pay for its increasingly large purchases of tea, always contracted for a year in advance. Because so few English products were of interest to the Chinese, the Company relied on the Country trade for cash. The Country ship owners and Country captains paid the proceeds of the sale of their Indian goods, along with the proceeds of the trade they did in Southeast Asia, into the Company's treasury in Canton. In exchange they received bills that could be cashed in London. This benefited the Country traders by eliminating the risk associated with shipwreck or piracy when shipping specie back to India and onward to England (Bully 2000: 1).

Country ships typically voyaged from Bombay to China between April and October with the aid of the southwest monsoon. The return journey was often faster, with ships arriving by March of the following year, driven by the northeast monsoon. Bombay merchants typically shipped cotton from India, along with some tin and pepper acquired in Southeast Asia, in return for sugar, tea, silk, zinc, and porcelain from China. In 1788, the year before the *Shah Muncher* was launched, it was noted that of the 41 foreign ships trading in China, 19 of them, or nearly half, were Country ships (Ball 1995: 31). By the time of her last voyage the proportion was down a little, with Country ships accounting for 18 of the 46 foreign ships arriving in Canton in 1795.[54]

8. CONTEMPORARY SHIPWRECKS

There are several shipwrecks with reflective surviving cargoes that went down shortly after the *Shah Muncher*. The list below highlights the parallel finds. Some porcelain designs were long-lived.

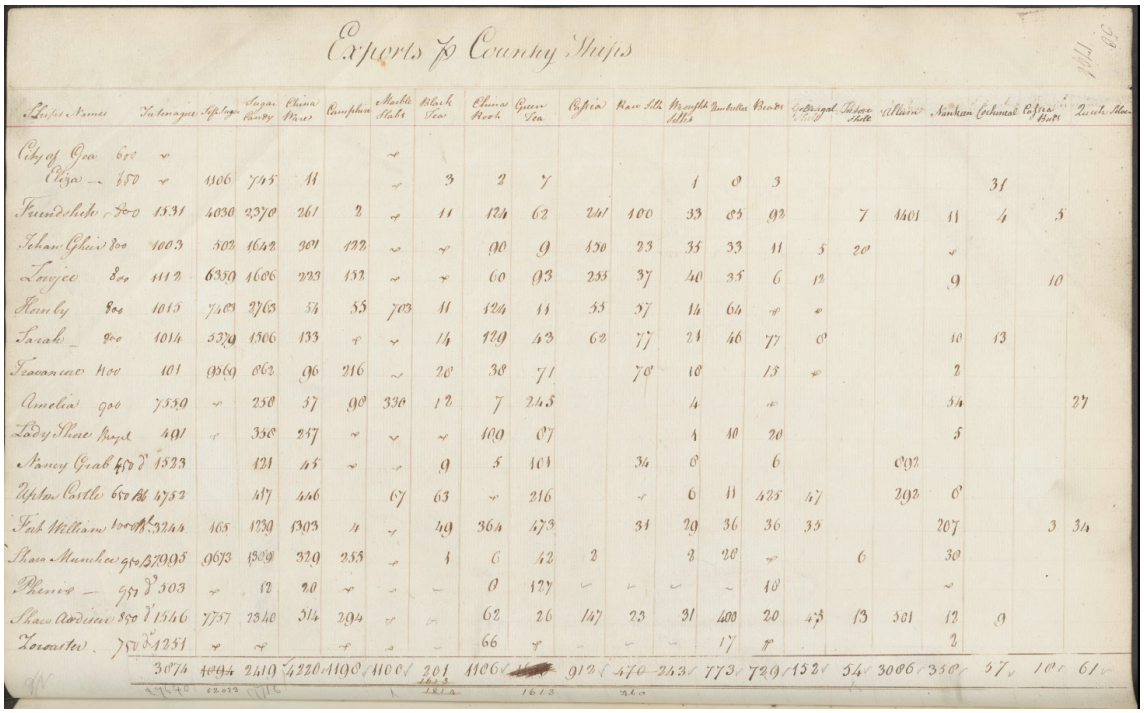
The *Sydney Cove* was lost north of Tasmania on 9 February 1797, just thirteen months after the *Shah Muncher* (Staniforth and Nash 1998). Chafing dishes, guglets and bowls from the wreck are identical to those on the *Shah Muncher*. The *Diana* was a relatively small Country ship of 350 tons burthen (Ball 1995). She wrecked just north of Malacca in 1817, carrying plates with a stylized Sanskrit character for the sacred 'oṁ', 'starburst' plates, octagonal serving dishes, wine bottles, glass beads, and zinc ingots. The *Desaru Wreck*, lying off the town of that name on the east coast of Peninsula Malaysia, is a Chinese junk that is thought to have sunk between 1821 and 1830 (Sjostrand *et al.* 2006: 100). Her ceramics cargo also contained 'oṁ' and 'starburst' dishes, Chinese spoons, and Yixing teapots. In 1822, the *Tek Sing* struck a rock and sank in the Gaspar Strait of what is now Indonesia (Pickford 2002). She was a Chinese junk of immense proportions, perhaps even larger than the *Shah Muncher*. She carried bowls with a band of circles around the

54 *Canton Diary*, 20 March–19 June 1796 p. 7, IOR/G/12/115, EIC Archives, British Library.

rim and lotus petal dishes and bowls from Dehua, Yixing teapots, and wine bottles. The *Tuara Wreck* is a late 18th or early 19th century Chinese junk, which wrecked northwest of Makassar, Indonesia (Flecker 1999). She carried lotus petal and 'om̐' bowls and dishes. Along with the *Desaru Wreck*, the *Tuara Wreck* demonstrates that late 18th to early 19th century Chinese blue-and-white porcelain, of varying quality, was exported in European ships and Chinese junks, with final destinations ranging from India to England and from Java to Eastern Indonesia.

9. SHIPWRECK FINDS AND THE FINAL MANIFEST OF THE *SHAH MUNCHER*

Fig. 22: The final manifest of the *Shah Muncher* (fourth from bottom).
(East India Company Collection, British Library).[55] © [2021] Adam Matthew Digital Limited.



Exports per Country Ships

Ships Names	Tutenague	Spelter	Sugar Candy	China Wares	Camphire	Marble Slabs	Black Tea	China Root	Green Tea	Bafia	Raw Silk	Wrought Silks	Umbrellas	Beads	Gelangal	Tobacco Rolls	Allum	Nankeen	Cochineal	Coffee Bags	Dutch Ales
City of Goa	650	″				″															
Eliza	650	″	1106	715	11		″	3	2	7			1	0	3					31	
Friendship	800	1531	4030	2370	261	2	″	11	124	62	247	100	33	65	93		7	1401	11	4	5
Johan Ghiss	800	1003	503	1642	301	122	″	″	90	9	130	23	35	33	11	5	20		″		
Lovjee	800	1112	6330	1606	223	132	″	″	60	93	233	37	40	35	6	12			9		10
Hemby	800	1015	7403	2763	34	85	703	11	124	11	33	37	14	64	″	″					
Sarah	800	1014	3379	1506	133	″	″	14	129	43	62	77	21	46	77	0			10	13	
Seacunca	800	101	9369	862	96	216	″	20	38	71		70	10		13	″			2		
Amelia	900	7330	″	258	37	90	330	12	7	245			4		″				34		27
Lady Shore	Sloop 400			358	257	″	″	″	100	07			1	10	20				5		
Nancy Grab	450	1523		121	45	″	″	9	5	104		34	0		6			092			
Upton Castle	650	4752		417	446		67	63	″	216		″	6	11	425	47		292	0		
Fob William	1000	3244	165	1730	1303	4	″	49	364	473		31	29	36	36	33			207		3	34
Shah Muncher	950	7995	9673	1500	329	235	″	1	6	42	2		2	20	″		6		30			
Phenix	950	303	″	12	20	″	″	″	0	127	″	″	″	″	10				″			
Shah Aodeen	850	1546	7757	2340	314	294	″	″	62	26	147	23	31	400	20	43	13	301	12	9		
Lowestoft	750	1251	″	″		″	″	″	66	″	″	″	″	17	″				2			
		3074	1094	2410	4220	1190	1100	201	1106		912	470	243	773	720	152	54	3086	350	57	100	61

9.1 Tutenague

Tutenague, or spelter, was a major Chinese export product. There were 7,995 piculs (483 tonnes) on board the *Shah Muncher*. The word 'tutenague' is derived from the Tamil 'thuthanaagam' which means raw zinc. Illiterate Englishmen sometimes used the term 'tooth and egg'.

Tutenague has been extensively researched and yet there appear to be misconceptions, with some equating tutenague to *paktong*, a Chinese alloy of copper with nickel and zinc (typically in the ratio 6:2:2), used to make candlesticks and the like.

55 *Canton Diary*, 20 March–19 June 1796 p. 50, IOR/G/12/115, EIC Archives, British Library.

The rectangular *Shah Muncher* ingots typically measured 28 × 16 × 2 cm and weighed from 4 to 5 kg. As zinc is a reactive metal it is not surprising that many of the ingots have blistered, cracked, and broken into smaller pieces.[56] The measured weight is less than the 6.3 kg for a pure zinc ingot of these dimensions, due to lighter corrosion products and their expansion. Dr Yiu-Kang Hsu of the Deutsches Bergbau-Museum Bochum in Germany used X-ray fluorescence analysis to determine the constituent elements of uncorroded material: 97.6% zinc, 1.5% iron and trace elements. This is very close to an 1820 analysis of 'Chinese tutenague' which determined 97.6% zinc and 1.9% iron (Muspratt 1861: 1151). So, tutenague is in effect zinc with minor iron impurities. It was mined and smelted in Yunnan, China, and was used primarily as an alloy of copper to make brass.

The 1817 wreck of the *Diana* was loaded with tutenague in the following manner, described as a wall (Ball 1995: 131):

> Lying right across the width of the vessel, the slabs were piled in layers 10 across and about 60 high with rush matting between each layer. The entire mass was held in place with dunnage bars of wattle pole 10 cm in diameter, the ends of which had been trimmed and pierced to take locking pieces, like the corners of a log cabin.

From the distribution of zinc ingots across the *Shah Muncher* wreck-site, the packing technique is likely to have been similar, although the wall would have been much bigger. Several wooden poles were also found, but well scattered.

Fig. 23: Two intact tutenague ingots in sodium-sesquicarbonate solution.

56 Many seemingly intact ingots broke apart as soon as they were dislodged.

9.2 Soft Sugar

Sugar is highly soluble in water, so the 9,673 piculs (585 tonnes) on board the *Shah Muncher* would have quickly dissolved once exposed. In Europe sugar was made in conical loaves with a rounded top and up to a metre in height. They were hard, such that a special tool called sugar nips was required to break off pieces for use. The term 'soft sugar' implies that the Chinese product was in granular form, probably packed in sacks. Remnants of hessian-type sacking were recovered from the wreck.

9.3 Sugar Candy

The *Shah Muncher* carried 1,309 piculs (79 tonnes) of sugar candy. Apparently, this is not rock sugar, but sugared fruits. The evidence is provided by the surviving cargo of the 1817 wreck of the *Diana*. Rapid burial in soft silt resulted in the remarkable preservation of packaging and contents. Wooden boxes marked with the Chinese characters for sugar candy (糖果) each contained four sealed porcelain 'ginger jars'. These jars contained sugared plums, ginger, rhubarb, and star anise (Ball 1995: 153).

So-called ginger jars and lids were found on the *Shah Muncher*, mostly broken. While these ginger jars were not associated with remnants of sugared fruits, one brown-ware jar did contain plum pits. The plums must have been either dried, salted or sugared to preserve them.

Ceramic containers, together with the wooden boxes and any organic packing material could weigh almost as much as the contents. It would therefore seem that the recorded commodity weights included the packaging. With such commodities delivered from source in such packaging, how could it be otherwise?

Fig. 24: Several plum pits were found inside this brown-ware jar.

9.4 China Ware

China ware refers specifically to porcelain, with a few exceptions such as biscuit figurines. The multitude of stoneware jars, such as the one mentioned above, were containers for other products and not part of the China-ware consignment. The *Shah Muncher* was loaded with 329 piculs (20 tonnes) of China ware. An earlier manifest lists China ware by chests, while records of private trade mention boxes. There is also an advance deduction of 2 percent damage.[57] During the 17th century fine porcelain was exported in barrels, with coarser wares simply encased in cylinders of straw.

The range of shapes and decorations is staggering. A small selection of these will be discussed in more detail in the Ceramics Cargo section below.

Fig. 25: A range of cups and jarlets recovered during one dive.

9.5 Camphor

The *Shah Muncher* shipped 255 piculs (15 tonnes) of camphor. Camphor is a white crystalline substance obtained by condensing the vapor given off by roasting the wood chips of *Cinnamomum camphora*, a tree native to China south of the Yangtze River. It is important in Hindu ritual, which may in part account for its presence in the cargo. While camphor is practically insoluble in water, there were no identifiable remnants among the large quantities of organic material found on the wreck-site.

The *Diana* carried 7.5 tonnes of camphor. At least part of that cargo was carefully packed in airtight, cubic lead containers, with 32 to a chest. Several thin-walled lead con-

57 *Canton Diary*, 20 March–19 June 1796, p. 31, IOR/G/12/115, EIC Archives, British Library.

tainers were recovered from the *Shah Muncher*, but nowhere near enough to account for 15 tonnes of camphor.

Ball (1995: 152) speculates that a black substance that concreted much of the glass bead cargo on the *Diana* was soft sugar residue. Some of the glass beads on the *Shah Muncher* were also concreted. Perhaps this was camphor residue rather than sugar.

9.6 Black Tea

Only 1 picul (60 kg) of black tea was recorded on the manifest, much less than the green tea cargo, and barely worth mentioning considering a single EIC ship loaded 830 tonnes of black tea in the same year. Both green and black teas are made from the leaves of the same plant, *Camellia sinensis*. Black tea is rolled and exposed for oxidation, whereas green tea is processed without oxidation.

9.7 China Root

China root is the rhizome of the plant *Smilax china*, not to be mistaken for Chinese ginseng, the rhizome of *Panax notoginseng*. A mere 6 piculs (360 kg) of China root were loaded on board, and yet, if the purely visual identification is valid, much of it survived on the wreck-site. Over 6 tonnes of China root were shipped on the *Diana*, packed in tubs or chests (Ball 1995: 152).

Fig. 26: Possible remnants of China root.

9.8 Green Tea

Shah Muncher loaded 42 piculs (2.5 tonnes) of green tea. Again, this is insignificant when compared to the hundreds of tonnes of green tea loaded on EIC ships in the same year. Many types are listed in the Canton Diary,[58] including Bohea, Congo, Souchon, Hyson, Hyson Skins, Pekoe, Tuankay, and Singlo.

9.9 Cassia

Cassia refers to the bark of the *Cinnamomum cassia* tree, found in southern China. It is often termed Chinese cinnamon, as it resembles true cinnamon, the inner bark of the *Cinnamomum verum* tree, and has a similar taste and fragrance. However, true cinnamon is more delicate in all respects. Only 2 piculs (120 kg) of cassia were recorded on the *Shah Muncher*, but there may have been more privately traded as apparently surviving samples are widespread.

Fig. 27: Possible cassia remnants inside a jar fragment.

9.10 Wrought Silk

Only 2 piculs (120 kg) of wrought silk were loaded in chests. The wrought silk would have consisted of woven and embroidered cloth and items of clothing including 'lushings', 'taffetas', 'satin', 'satin painted', 'porfrees', 'goshees', 'changeable', 'paduasays', 'brocades',

58 *Canton Diary*, 20 March–19 June 1796 p. 48, IOR/G/12/115, EIC Archives, British Library.

'painted gauze', 'gorgorons', 'black nankeen satin', and handkerchiefs.[59] Raw silk is another common commodity, usually shipped in bales, but it was not loaded for the final voyage of the *Shah Muncher*.

9.11 Umbrellas

Umbrellas seem to have been a highly sought-after Chinese manufactured product. Some 28 piculs (1.7 tonnes) of umbrellas were stowed on the *Shah Muncher*. They were made from soft-wood, bamboo, and probably wax paper. The modern equivalent weights less than 200 grams. Even if the traditional version weighed twice as much, several thousand umbrellas made up this shipment. Each one would have required intricate hand crafting.

Fig. 28: The extremely fragile remains of the top of an umbrella (finial and struts), with the sliding-opening element adjacent.

9.12 Tortoise Shell

The expression 'tortoise shell' is generally a misnomer: while the shell itself is usually taken from the hawksbill sea turtle, the term often refers to finished products. These include fans, combs, and decorative boxes. Folding fan blades were found on the wreck, but they appear to be of bone or ivory. Only one small fragment seems to have survived on the wreck.

59 *Canton Diary*, 20 March–19 June 1796 p. 28, IOR/G/12/115, EIC Archives, British Library.

9.13 Nankeens

A nankeen is a kind of cloth woven from a yellow or buff variety of cotton. It was originally made in Nanjing, alternately romanized as Nanking, hence the term. Some 30 piculs (1.8 tonnes) of nankeens were on board the *Shah Muncher*, probably in chests. Some of the less coarse woven material recovered from the wreck may turn out to be nankeen remnants upon closer examination.

10. CERAMICS CARGO

Apart from the tutenague, the primary non-perishable cargo on board the *Shah Muncher* was ceramics. There is a huge variety and quantity, which will be fully catalogued in the final report. In the meantime, the more mainstream ceramics are presented here. There are nine key types: blue-and-white porcelain, overglaze enamelled porcelain (the enamels have suffered chemical degradation as they are not protected by overglaze); combined blue-and-white with overglaze enamel porcelain; café-au-lait porcelain; blue-glazed porcelain with enamel overglaze; enamel on biscuit figurines; Yiqing; stoneware (brown-ware) jars; and earthenware. They were produced in the kilns of Jingdezhen, Dehua, Zhangzhou, and Guangzhou.

Much of the porcelain was intended for the European market, either in India or for transhipment to Britain. Serving dishes, chafing dishes, soup tureens, teapots and mugs are clearly of European design, while cups and bowls could serve any market. In 1795 the Canton Diary details a China ware cargo destined for Saint Helena, a European outpost off the west coast of Africa. It lists plates, soup plates, dessert plates, bowls, quarter pint cups and saucers, coffee cups and saucers, guglets and basins, custard cups, chamber pots, half pint cups and saucers, long tea sets (133 pieces each), breakfast sets (35 pieces each), and large baking dishes.[60] Apart from chamber pots, elements of all these types have been found on the *Shah Muncher.*

Figurines in the form of dogs and parrots would serve a purely decorative role for European buyers, or perhaps they could be termed curios. Curios, as a classification, was more common during the 17th century when the Far East was more fable than fact. But what would the European market make of a tiny laughing Buddha or a *makara* (a Sanskrit term for a legendary sea-creature from Hindu mythology)? These figurines would seem to be more relevant for the Indian market. Earthenware pots for boiling herbs, and Yixing teapots with Chinese poems inscribed on the base would seem to be specifically for a Chinese market. Perhaps they were to be offloaded at Malacca or Penang along the way. This is but a snippet of the *Shah Muncher*'s China ware cargo. Much more detail shall follow in due course, including quantitative and distribution analyses.

60 *Canton Diary*, 20 March–19 June 1796 p. 31, IOR/G/12/115, EIC Archives, British Library.

Fig. 29a and b: Octagonal blue-and-white porcelain serving dishes (left) and a chafing dish (warming plate) (right).

Fig. 30a and b: A blue-and-white dragon dish (left) and a 'horses beneath a willow' dish (right) recovered in the same stack.

Fig. 31a and b: A blue-and-white 'ginger jar' lid (left) and a covered box base (right).

Fig. 32a and b: A blue-and-white bowl with lotus petal, peach and lingzhi design (left), and a wood-block print bowl (right).

Fig. 33a and b: A large overglazed enamel dish (left) and two bowls (right).

Fig. 34a and b: An overglaze enamel cup (left) and a bowl with a Hellenistic garland design (right).

Fig. 35a and b: Combined blue-and-white with enamel overglaze on a bowl (left) and a covered jar lid (right).

Fig. 36: A row of blue-and-white spirally decorated cups with combined overglaze enamel.

Fig. 37a and b: Café-au-lait cup with blue-and-white medallion (left) and a lid that was once decorated with overglaze (right).

Fig. 38a and b: Blue-glazed jar lid (left) and small cup (right).
Both originally had overglaze enamel decoration, probably in gold.

Fig. 39a and b: Enamel on biscuit dog (left) and a parrot figurine (right).

Fig. 40a and b: Enamel on biscuit Buddha (left) and makara figurine (right).


Fig. 41a and b: Two Yixing teapot bases with inscribed Chinese characters.

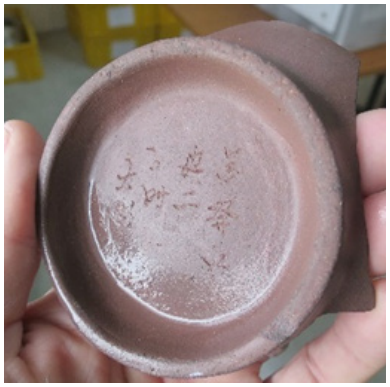



Fig. 42a and b: A brown-ware jar with four lug-handles (left) and a dragon jar fragment (right).


Fig. 43a and b: An earthenware pot for boiling herbs (left) and a crucible (right).


11. NON-CERAMIC CARGO

Non-ceramic cargo here refers to the surviving non-ceramic finds that were not on the final manifest and yet occurred in sufficient quantity to suggest they were a trade commodity. These are generally the piece goods that were purchased by private merchants or ship's officers. The short list discussed below is but a taste of the many non-ceramic cargo items found on the *Shah Muncher*. No archival account could cover such a variety, making the archaeological record much more important.

11.1 Agate

Thousands of pieces of agate were recovered from the wreck-site. They are in the form of polished medallions, either rectangular or square, with truncated corners. Some exceptions are oval or circular. Interestingly, the *Shah Muncher* carried 100,000 pieces of carnelian to China on her last outward voyage.[61] Agate is banded carnelian. Carnelian has been an important Indian export for centuries. The vast quantity sent to Canton in this case seems to have led to an oversupply. The agate found on the wreck must have been the excess that could not be sold.

Agate has been found on a contemporaneous shipwreck, the *Valentine*, an East Indiaman lost off the small island of Brecquou in the Guernsey Islands, at the entrance to the English Channel in 1779 (Valentine Excavation Group 1976). She was sailing from Bombay and Madras for London, with 4,000 bags of saltpetre, several hundred bales of raw silk, '18 boatloads of red dyewood', as well as private trade goods. The truncated square and rectangular pieces of agate are identical in size and shape to those from the *Shah Muncher,* although they do not exhibit the same degree of banding. Green (2018: 19) speculates that the medallions were cut and shaped in India for the British market, where they would have been set in Georgian jewellery such as signet rings and broaches. Extant examples of such jewellery tend to have crests or monograms carved intaglio. The Chinese used agate, regarded as the next best thing to jade, for pendants, necklaces, bracelets, hat adornments, and belts. Indeed, it was sometimes referred to as red jade.

61 *Canton Diary,* 20 March–19 June 1796 p. 49, IOR/G/12/115, EIC Archives, British Library.

Fig. 44: Intricate banding on some of the agate medallions.

11.2 Glass Beads

Glass beads are not on the *Shah Muncher*'s final manifest, and yet the wreck-site is carpeted with them. Opaque pale blue beads tend to be heavily eroded. However, opaque blue beads with a darker swirl are in excellent condition. Translucent glass beads come in red, dark blue and green, while hollow opalescent beads may be faux pearls.

Fig. 45: A variety of glass beads.

In 1792 The *Shah Muncher* loaded 9.2 tonnes of glass beads. One glass bead weighs approximately 0.55 grams. The resultant number of beads is nearly 17 million. In the same year, the *King George* loaded over 24 tonnes, a staggering 44 million glass beads. If that is not enough, the entire shipment of glass beads on Country Ships for the year 1792 was 130 tonnes, equivalent to 236 million beads. The recorded weight must have included the chests or boxes, so these numbers may be reduced by 10 to 20 percent. Nevertheless, the degree of mass production was astounding.

Many chests of glass beads were found on the *Diana*. The beads were all red and seem to have been heavily concreted with a black cementing substance. Some were concreted in the shape of the chests that had eventually rotted away, suggesting that the cementing substance was within the chest. However, spherical glass beads are inherently robust and would not seem to warrant packing material. Interestingly, layers of red beads encrusted in a black substance were also found on the *Shah Muncher* site. Encrustation seemed to be restricted to red beads only.

11.3 Stone Plinths

Fourteen very crudely shaped stone plinths were observed on the wreck-site. They have a rectangular base tapering to a squarish top, but no two are the same. The largest is 70 cm in width at the base. Some are short and squat while others are tall and narrow. None could be utilised in a structure without considerable refinement. From macroscopic examination, they appear to be sandstone or siltstone.

Fig. 46: One of the larger stone plinths in-situ.

11.4 Betelnut Cutters

Betelnut chewing is a South and Southeast Asian tradition that seems to have encroached into southern China at least a millennium ago (Salmon 2009: 184). The copper alloy betelnut cutters found on the *Shah Muncher* are of traditional Indian design. They have been commissioned in China for export to India. It would be interesting to find out whether this was to save costs, improve quality, or both.

Betelnut is actually areca nut, which is not a nut at all but the seed of a berry. As the berry dries the fruit inside hardens to a wood-like consistency, hence the need for scissors-like cutters. Only a few thin slices are needed, wrapped in betel leaf with a little slaked lime, for consumption.

The betelnut cutters come in three parts. The two parts illustrated below were joined by a hinge. The gap was filled by an iron blade that has corroded away, partly through galvanic action.

Fig. 47: Copper alloy betelnut cutters, after extensive cleaning.

11.5 Bracelets

Copper alloy chain bracelets may be unclasped by means of a threaded pin with a dome head. They are a good fit for a male wrist, however they are far too heavy for day-to-day use. They might have served a ceremonial purpose, to either adorn people or, perhaps, statues.

Fig. 48: Heavy copper alloy bracelet.

11.6 Silver-plated Pots

Silver-plated copper alloy pots are decorated with engraved flowers and leaves within *ruyi* lappets. The background is filled with cross-hatching. These pots probably had lids, and these are likely to be identified once the artefacts have been cleaned. There are many possible uses for small pots such as these, holding lime for betelnut consumption being one of them.

Fig. 49: A silver-plated pot, possibly for holding slaked lime.

11.7 Brass Leaf

Several slabs and rolls of brass leaf were recovered. So thin and compressed were the individual sheets of brass that underlying layers had completely escaped oxidation. Consequently, they sparkled like gold when exposed. Indeed, brass leaf was intended to emulate gold leaf but of course at a much lower price. In 1820, Country ships loaded 77 piculs (4.6 tonnes) of brass leaf in Canton.[62]

Fig. 50: A slab of brass leaf, still glistening after 225 years underwater.

62 *Canton Diary,* 25 March 1820–21 March 1821, p. 164, IOR/G/12/222, EIC Archives, British Library.

11.8 Bottles

Many bottles were found, mostly broken. Case and wine bottles of fairly uniform size dominated. A long-necked cognac bottle survived intact, as did a probable beer bottle. These European-type bottles were almost certainly holding beverages for consumption on board. With the limited number of European officers in the crew, consumption would appear to have been high.

Fig. 51: Long-necked cognac bottle.

12. SHIP'S GEAR

Apart from isolated sections of coherent hull structure and a large amount of cargo, there is little left of the 1000 tons burthen ship, the *Shah Muncher.*

12.1 Bilge Pump Valves

All together eight bilge pump valves, or piston buckets, were recovered. There are several variations in design, and it is quite likely that they are from four different bilge pump systems utilising two valves each, or from two double pumps. Each valve features a double flap, which was probably hinged with thick leather originally.

Fig. 52: A bilge pump valve with one flap missing.

12.2 Pintles and Gudgeons

Pintles and gudgeons form the hinge mechanism for the rudder. As discussed earlier, four pintles were discovered in a cluster some 100 m south of the main wreckage, clearly marking the rudder's final resting place. The one gudgeon that was found occurred at the base of the sternpost-deadwood, which was uncovered near the bottom of the rocky slope. At least three gudgeons are now missing. They probably drifted away with part of the stern when the ship broke up.

Fig. 53: The end of a gudgeon (pivoted upwards) and associated straps (broken).

12.3 Rigging

Surviving rigging came in the form of complete single-part blocks, pulley sheaves, and a deadeye. The blocks and sheaves were part of the running rigging, used for sail control, whereas the deadeye was part of the standing rigging holding the masts in place. There was also a remarkable amount of rope of varying diameter, and several intact bundles of 'small stuff' (twine).

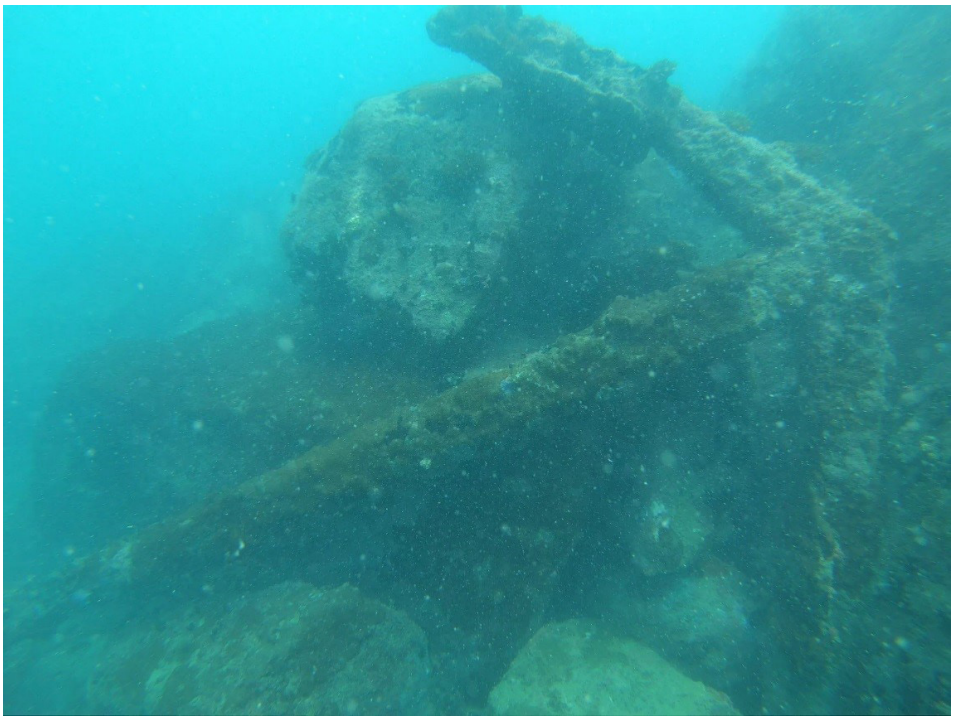
Fig. 54a and b: A complete deadeye (left) and a single-part block (right).

12.4 Anchors

Four anchors were found on the wreck-site. They are all of Admiralty Pattern design but vary in size. Anchors #1, 2 and 4 are each approximately 5 m long but due to variations in section they have different weights. Anchor #3 is significantly smaller and would have served as a kedge. Kedge anchors were typically used for warping, that is pulling the vessel along a restricted waterway by repeatedly setting the anchor well forward and then hauling in on the cable. Or for kedging, which usually involved setting the anchor in deeper water in order to pull a ship free after grounding. Anchor #3 was in the centre of the main wreckage, so it had not been used for kedging the ship off the rocks.

The best bower anchor (the largest) is Anchor #4, which was found at the point of impact. It may well have been dropped deliberately as soon as the ship struck. This was frequently done to prevent a vessel from drifting free before it could be made watertight. Anchors #1 and 2 were found approximately 100 m south and south-southwest of the main wreckage. Both were lighter than Anchor #4, so they may have been deployed for kedging.

Fig. 55: Anchor #2 (5 m long) lodged among boulders.



12.5 Cannons

Twenty-four iron cannons were found. Cannons of this period were of two types: long guns and carronades. Long guns had greater range and accuracy, while carronades were shorter, lighter and of higher calibre. Carronades were better suited to merchant ships, mainly due to their lighter weight and more economical use of gunpowder. The reduction in gunpowder was possible as there was less windage, that is, less of a gap between the cannonball and the bore. Higher tolerances were achieved by manufacturing both the cannonades and the cannonballs at the same company. It was not possible to achieve the same tolerances with long guns.

All of the *Shah Muncher*'s guns are heavily concreted so it is not possible to determine whether any are carronades. The relative length to girth would suggest that most, if not all, are long guns. The larger *Surat Castle* was armed with twenty 9-pounders and six 6-pounders when launched in 1796,[63] so the number of guns found on the *Shah Muncher* is consistent with a merchant ship of her size.

Fig. 56: Cannon #10 heavily concreted with hard and soft corals.

13. CONCLUSION

Shipwreck 2 has been positively identified as the *Shah Muncher*, a Country ship launched in India in 1789. Country ships were privately owned merchant vessels that operated under license from the East India Company. But to maintain the Company's monopoly, they were only permitted to trade between Indian Ocean ports, Australian settlements, and within Asia.

The *Shah Muncher* participated exclusively in the China–India trade. Every year of her relatively short life she voyaged from Bombay to Canton with a primary cargo of cotton, and returned with sugar, zinc, and porcelain.

On the 8th of January 1796 the heavily laden *Shah Muncher* was forced upon the rocks of Pedra Branca by the current. Boulders stove in her planking. She sank in shallow water with part of the hull remaining exposed. The swells caused by the prevailing winds of the northeast monsoon seem to have quickly broken the ship to pieces. The masts must have collapsed within three days, as no wreckage was observed by ships passing at that time.

Much of the accessible cargo was probably salvaged by local seafarers, although the ongoing monsoon would have hindered this task for some months. Over the years the hull completely collapsed, the ceramics scattered and eventually ballast stones and cen-

63 '*Surat Castle* (1788 ship)', Wikimedia Foundation, last modified July 18, 2021, 09:52, https://en.wikipedia.org/wiki/Surat_Castle_(1788_ship).

trally loaded zinc ingots spread as well. The rocky seabed was so inundated by cargo and trapped sediment that it was leveled. Flat and soft corals covered much of this new surface. Apart from well camouflaged cannons and not so well camouflaged anchors, there was no longer any sign of a shipwreck in the shallows. But in deeper water surrounding the shallows, in sand filled gullies, ceramic shards could still be seen. It is these shards that led to the rediscovery of the *Shah Muncher*.

Over fourteen one-week long excavations, including two for the recovery of large artefacts such as cannons and anchors, the full extent of the wreck-site was revealed. Work started in the Basin to the northwest and proceeded up the rocky slope before focusing on the densely packed shallows. A remarkable degree of stratigraphy revealed the wrecking process, whereby heavy destructive elements such as ballast stones and zinc ingots have astonishingly protected the underlying ceramics. Porcelain that survived intact until burial was ensured longevity.

The range of recovered ceramics is extensive in both type and decoration. They were made in the kilns of Jingdezhen, Dehua, and Zhangzhou. Stoneware storage jars were probably made in Guangdong, but they were not an export item in themselves. They contained liquids and organic materials for trade and for shipboard use.

The *Shah Muncher* is the largest of the very few Country ships that have been excavated. As far as can be ascertained, she is the only one bound from China to India. The surviving manifest provides a broad view of her cargo: 585 tonnes of soft sugar; 483 tonnes of zinc; 79 tonnes of sugar candy; 20 tonnes of porcelain; 15 tonnes of camphor; 2.5 tonnes of green tea; 2.3 tonnes of cotton cloth; 1.7 tonnes of umbrellas; and small quantities of black tea, cassia, raw silk, china root, and tortoise shell. The total recorded cargo weight was 1,190 tonnes.

The archaeological finds paint a much more vivid picture. Some non-ceramics artefacts were for shipboard use, such as bronze mortars and bottles of wine. But most were for trade, and they were not on the manifest. They include stone plinths, agate medallions, glass beads, betelnut cutters, bracelets, silver-plated pots, and brass leaf. Surviving ship's gear includes anchors, cannons, bilge pump valves, deadeyes, pulley blocks, sheaves, and rope. Isolated coherent hull structure suggests great strength via thick hull planking with full-length longitudinal scarfs.

The *Shah Muncher* sank twenty-three years before Raffles re-established the port of Singapore. With many Country ships remaining in service for decades, had she not come to grief on the rocks of Pedra Branca, the *Shah Muncher* may well have been one of the first ships to drop anchor in Singapore roads, the midway point on her regular round trip from Bombay to Canton. Her cargo would not have changed much, so it provides some idea of the types of goods that were purchased by Singapore's fledgling community, along with those that would have been transshipped. The fleets of EIC ships that first traded at Singapore would have looked just like the *Shah Muncher*. However, if they were homeward bound, they would have carried more tea than sugar.

The *Shah Muncher* passed close by Pulau Satumu, the site of Raffles Lighthouse, eleven times. She often stopped off at the British settlement in Penang. But she never did drop anchor in Singapore roads. Nevertheless, the *Shah Muncher* remains of great relevance to Singapore's maritime past.

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