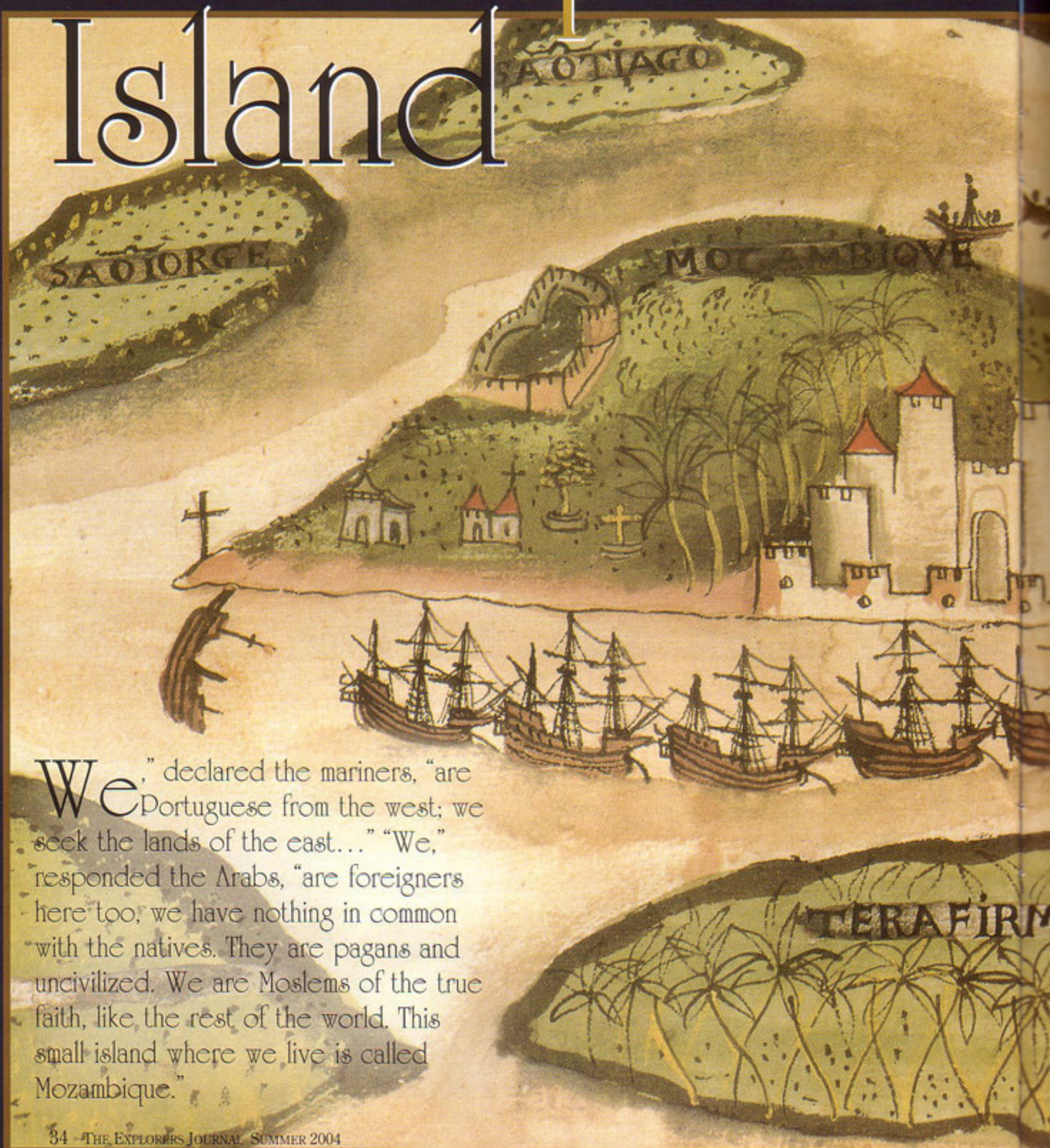


Once Upon an Island

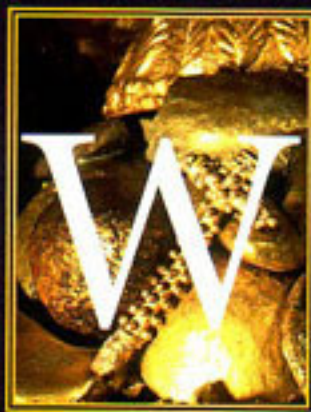


“We,” declared the mariners, “are Portuguese from the west; we seek the lands of the east...” “We,” responded the Arabs, “are foreigners here too, we have nothing in common with the natives. They are pagans and uncivilized. We are Moslems of the true faith, like the rest of the world. This small island where we live is called Mozambique.”

A sixteenth-century view of the island of Mozambique with Portuguese carracks at anchor. The ship on its side near the point is in the position where the wreck was found. The island in the top left is where Vasco da Gama conducted a mass and erected a tall stone cross.

Exploring the Fort San Sebastian Wreck off Mozambique

BY MENSUN BOUND



When Vasco da Gama first cast anchor off the tiny Island of Mozambique on March 2, 1498, worlds truly did collide. It was Portugal's first step in building an empire that within only a few years would stretch from Brazil in the west to

Japan in the east, and which, for better or worse, would forever change Africa, India, the Orient, and Europe. The Moors distrusted the unknown and rather alarming Europeans; the Europeans despised the Moors; neither respected nor understood the native Africans. It is no small wonder then that their first encounter ended in hostilities. But the Portuguese had bigger guns that gave their drive to expand an edge over rival Africans, Arabs, Hindus, and Chinese. From Mozambique the Portuguese pushed east toward China, which they reached in 1517. For the first time, Europe and the Orient were connected by sea.

Unlike Spain, whose conquests were driven by a desire for gold, territory, and souls, Portugal aspired not to the acquisition of land but to the forging of trading relationships with partners around the globe. A small nation that lacked the resources to acquire and govern immense overseas dominions, Portugal chose instead to build an empire of the sea. What developed was a vast trading network secured by gunned ships and a nexus of fortified trading-posts, way-stations, and administrative centers—among them Goa, Malacca, Macau, and, perhaps its most important in Africa, Mozambique.

Two-and-a-half-km-long and 500-paces-wide, Mozambique is breathtakingly beautiful, yet life on the island is not easy, water is scarce, comforts are few, disease is rife, and contact with the outside world is rare. It is hard to believe that this speck in the sea was once a cornerstone of an empire that was so important it later gave its name to the entire nation. Today, all that remains to attest to its former prominence are two great stone forts, both of which still bristle with old cannon.



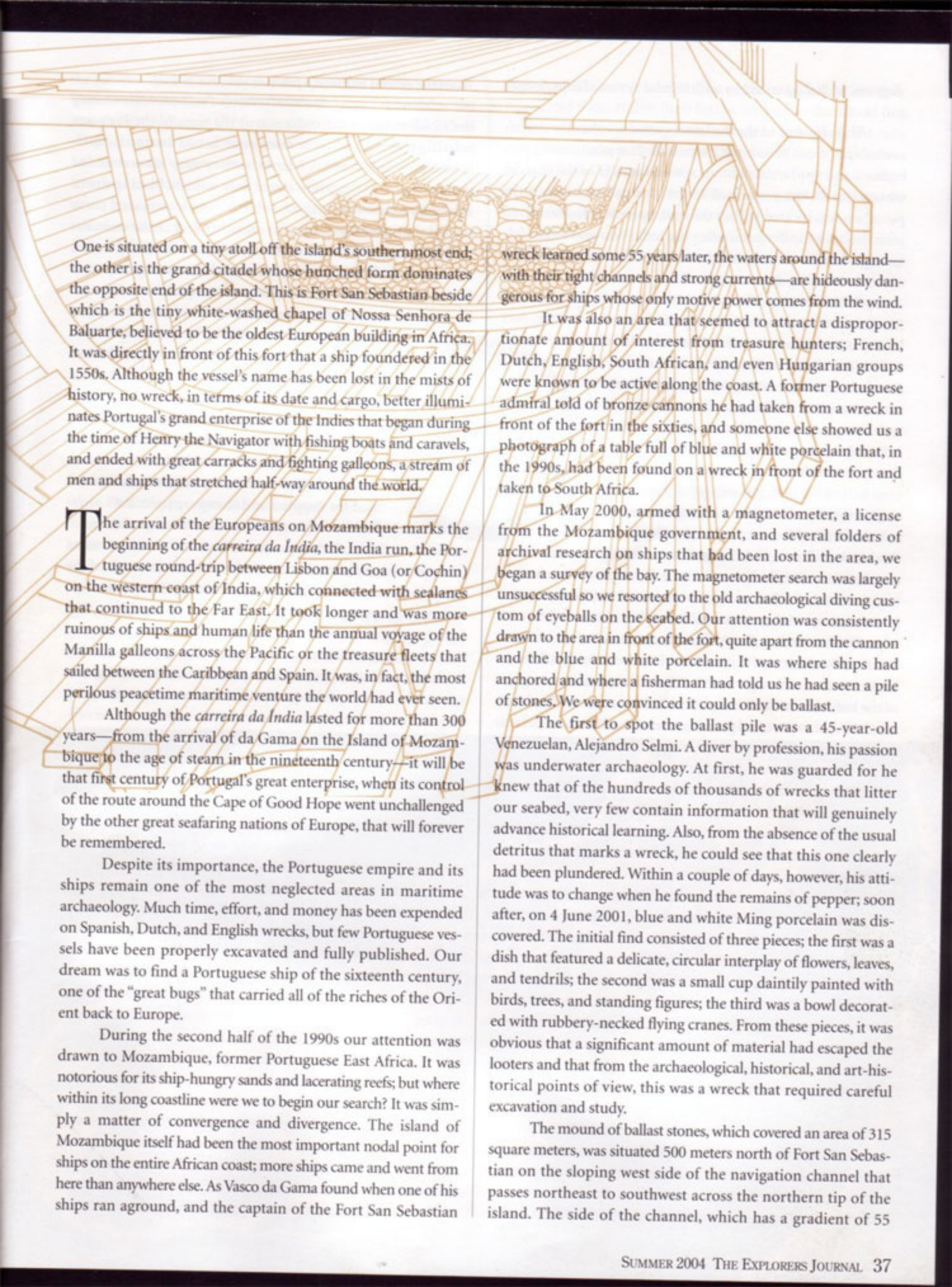
Despite its importance,

the Portuguese empire and its ships remain one of the most neglected areas in maritime archaeology.



Below: Draughtswomen Suzanne de Boos and Helen Ford recording the details from one of the ship's timbers. Right: Divers Miguel and Joanna with porcelain they have just recovered from the wreck. Background: Artist's cut-away impression of the lower hull at midships (Stephan Rentsch)





One is situated on a tiny atoll off the island's southernmost end; the other is the grand citadel whose hunched form dominates the opposite end of the island. This is Fort San Sebastian beside which is the tiny white-washed chapel of Nossa Senhora de Baluarte, believed to be the oldest European building in Africa. It was directly in front of this fort that a ship foundered in the 1550s. Although the vessel's name has been lost in the mists of history, no wreck, in terms of its date and cargo, better illuminates Portugal's grand enterprise of the Indies that began during the time of Henry the Navigator with fishing boats and caravels, and ended with great carracks and fighting galleons, a stream of men and ships that stretched half-way around the world.

The arrival of the Europeans on Mozambique marks the beginning of the *carreira da Índia*, the India run, the Portuguese round-trip between Lisbon and Goa (or Cochin) on the western coast of India, which connected with sealanes that continued to the Far East. It took longer and was more ruinous of ships and human life than the annual voyage of the Manilla galleons across the Pacific or the treasure fleets that sailed between the Caribbean and Spain. It was, in fact, the most perilous peacetime maritime venture the world had ever seen.

Although the *carreira da Índia* lasted for more than 300 years—from the arrival of da Gama on the Island of Mozambique to the age of steam in the nineteenth century—it will be that first century of Portugal's great enterprise, when its control of the route around the Cape of Good Hope went unchallenged by the other great seafaring nations of Europe, that will forever be remembered.

Despite its importance, the Portuguese empire and its ships remain one of the most neglected areas in maritime archaeology. Much time, effort, and money has been expended on Spanish, Dutch, and English wrecks, but few Portuguese vessels have been properly excavated and fully published. Our dream was to find a Portuguese ship of the sixteenth century, one of the "great bugs" that carried all of the riches of the Orient back to Europe.

During the second half of the 1990s our attention was drawn to Mozambique, former Portuguese East Africa. It was notorious for its ship-hungry sands and lacerating reefs; but where within its long coastline were we to begin our search? It was simply a matter of convergence and divergence. The island of Mozambique itself had been the most important nodal point for ships on the entire African coast; more ships came and went from here than anywhere else. As Vasco da Gama found when one of his ships ran aground, and the captain of the Fort San Sebastian

wreck learned some 55 years later, the waters around the island—with their tight channels and strong currents—are hideously dangerous for ships whose only motive power comes from the wind.

It was also an area that seemed to attract a disproportionate amount of interest from treasure hunters; French, Dutch, English, South African, and even Hungarian groups were known to be active along the coast. A former Portuguese admiral told of bronze cannons he had taken from a wreck in front of the fort in the sixties, and someone else showed us a photograph of a table full of blue and white porcelain that, in the 1990s, had been found on a wreck in front of the fort and taken to South Africa.

In May 2000, armed with a magnetometer, a license from the Mozambique government, and several folders of archival research on ships that had been lost in the area, we began a survey of the bay. The magnetometer search was largely unsuccessful so we resorted to the old archaeological diving custom of eyeballs on the seabed. Our attention was consistently drawn to the area in front of the fort, quite apart from the cannon and the blue and white porcelain. It was where ships had anchored and where a fisherman had told us he had seen a pile of stones. We were convinced it could only be ballast.

The first to spot the ballast pile was a 45-year-old Venezuelan, Alejandro Selmi. A diver by profession, his passion was underwater archaeology. At first, he was guarded for he knew that of the hundreds of thousands of wrecks that litter our seabed, very few contain information that will genuinely advance historical learning. Also, from the absence of the usual detritus that marks a wreck, he could see that this one clearly had been plundered. Within a couple of days, however, his attitude was to change when he found the remains of pepper; soon after, on 4 June 2001, blue and white Ming porcelain was discovered. The initial find consisted of three pieces; the first was a dish that featured a delicate, circular interplay of flowers, leaves, and tendrils; the second was a small cup daintily painted with birds, trees, and standing figures; the third was a bowl decorated with rubbery-necked flying cranes. From these pieces, it was obvious that a significant amount of material had escaped the looters and that from the archaeological, historical, and art-historical points of view, this was a wreck that required careful excavation and study.

The mound of ballast stones, which covered an area of 315 square meters, was situated 500 meters north of Fort San Sebastian on the sloping west side of the navigation channel that passes northeast to southwest across the northern tip of the island. The side of the channel, which has a gradient of 55

degrees, is characterized by an irregular series of dips, ledges, and boulders.

The removal of the ballast revealed a coherent timber assemblage from the ship's lower hull. It was situated upon bedrock and dead coral right up against the edge of the channel where, clearly, the vessel had struck. A small amount of the porcelain was located within the hull; more was found mixed with the ballast spill surrounding the hull; most was found following a fairly well-defined line-of-fall below the wreck which curved west along the channel bed.

Visibility ranged from 2 to 15 meters and a differential of 3 to 4 meters between low and high tides gave flows of 2 to 5 knots, which meant that all diving had to be confined to "windows" of one hour or more at slack water.

Our techniques were standard to any underwater excavation, but fundamentally we were a low-tech operation living ashore and diving from inflatable boats and an old dhow.

The timbers that survived were from the after half of the hull, beginning just before midships (high-water depth 5.2m) and ending at the bottom of the sternpost (high-water depth 15.4m), a fore- and aft-distance of 17.2m. The assemblage begins at exactly where the shallows end and the slope of the channel begins. Clearly the forward half of the vessel had been stranded in the shallows while her after half remained suspended over the edge. The contending forces at work upon her hull would have been considerable and it would not have been long before she broke into two. Although there was little trace of the forward half of the hull, the after half had not moved from where it had ruptured. Heeled to port, and pointing toward the fort, the vessel was held in place by the weight of its ballast and the spurs and sharp ledges of the slope. The port side of the vessel survived to a little above the orlop deck. The starboard side, however, was unprotected by ballast and thus had soon been lost to erosion, natural decay, and wood-consuming marine parasites. The starboard side of the assemblage consisted of only six strakes above the keel, but this included the tuck at the stern. The rudder did not survive, but the concreted gudgeons and parts of the sternpost did. In general, parts of the wreck that were covered by ballast, that is to say mainly the portside timbers below the orlop deck, were well preserved, while the timbers above the orlop deck and all those on the starboard side were badly eroded and consumed by teredo worms and other agents of microbiological attack.

From the identification of Iberian oaks used in the vessel's construction, we know that the vessel was made in Portugal rather than India, which produced some excellent ships for the *carreira*. Not enough of the vessel survived to determine whether she was a carrack, or *não*, or a galleon, but the indications are that it was the former. The remains of her contents suggest that she was primarily a cargo carrier, and a preliminary study of historical records indicates that there were no galleons lost around Mozambique at this time whose location cannot be identified, but a number of carracks appear to have disappeared

from the record without a trace.

So what did a *não da carreira da Índia* look like during the Golden Age of the India run at the time of the Fort San Sebastian wreck? In body they were broad-beamed, bluff-bowed and slack-lined. Underwater they were more rounded than wedge-shaped, while above their usually black-painted sides expressed considerable tumble-home, or an inward curve toward the bulwarks that gave the weather deck in the waist less width than the deck below. At the very front of the vessel, immediately forward of the forecabin, was a galley-style beakhead, which was used as the seamen's latrines or "heads."

Near the center of the upper deck was a hatchway that, when not battened, led to the middle deck where the boats and cannon were lashed and where the soldiers slept among the boxes of merchandise. On the middle deck was another hatchway that opened into the hold-deck where cargo, provisions, water, and ship's stores were stowed. The final hatchway led down in the dank, ill-ventilated, foul-smelling lower ballast hold, which was also used for supplies and storage, particularly high-bulk, deadweight merchandise such as porcelain.

To modern eyes, the most prominent features of these vessels are the castles that towered over both ends of the hull. The stern castle consisted of a quarter-deck, a poop-deck, and often a capping deck: each shorter than the one below. The captain, pilot, deputy-pilot, skipper, secretary, constable, and other important officers and passengers were housed within this edifice. Most of the cabins opened to a balcony that ran around the outside of the quarter deck and sometimes the poop above. The uppermost level was where the captain, senior officers, and important passengers dined. The forecabin, by contrast, was triangular in plan and often projected forward of the stem. Within and below the forecabin were billeted the bosun, carpenter, caulker, cooper, and artillery men who had their powder and other materials in this area. Crew were usually in the forepeak area below the castle. In addition to providing accommodation (and thus freeing space within the hull for storage), the purpose of the castles was to provide a fighting platform for in-close or contiguous, ship-to-ship engagements.

With regard to propulsion, the Portuguese carrack had three or four masts of which the main—which was usually the only one stepped into the keel—was higher and sturdier than the others, fortified with great wooden braces that were girded into one with hoops of iron. Both the main and foremasts supported topmasts but, whereas the foremast was usually vertical, the main and mizzen were raked aft. In addition there was a well-angled bowsprit, which emerged from the nape of the beak, and, from the upper transom at the stern, a rearward projection, sometimes called an outlicker, to which the hindmost sail was tackled.

The forward press consisted of a spritsail on a yard that was slung below the bowsprit and a large foresail on the foremast with a topsail above. The mainmast, which was situated on



the weather deck at roughly midships, sported a huge mainsail and a much smaller topsail which was hung from above the crow's nest. Whereas the fore and mainmasts were bedecked with square sail (actually trapezoidal), the mizzen, which was situated on the quarter deck, carried a large, lateen sail that was attached to a long diagonal yard. On larger carracks there was often a second mizzen, or bonaventure mizzen, on the poop, which carried another lateen sail, the clew of which was running-roped to the outlicker.

From the purely historical point of view the most important items of cargo were the spices. Within the ballast and between the timbers of the bilge, or in other anaerobic pockets around the site, we found the remains of pepper, nutmeg, and mace. The peppers, though in very delicate condition, were still recognizable as corns; the nutmegs were still quite firm, but the mace survived only as a fine tissue that disintegrated upon touch.

The movement of exotic, pungent vegetable substances from East to West represents one of the oldest, most extensive, and lucrative trade networks the world has ever known. It was for spices that Columbus went West and Dias and da Gama went East. Pepper was the most basic and, generally, most sought after spice of all. It was indigenous to the Malabar Coast of India but later it was found that it would also thrive in Sumatra. *Piper nigrum*, from which derive both black and white pepper, is a perennial climbing vine, its fruit, the peppers, issue as elongated

Left: The Emperor Jiajing was obsessed with longevity and the search for an elixir of everlasting life. This was reflected in the art of the cargo. This dish, for instance, features cranes and pine trees, both common symbols of longevity in Chinese art. Jiajing died in 1566 poisoned by a potion he hoped would give him the immortality he craved.

clusters of 50 or more berries. The corns are picked before they ripen, and then, still in their husks, are laid in the sun to dry, during which process they turn from green to black. In the early days of the trade, pepper sold in Lisbon at 40 times its purchase price in India. Thousands of tons of it were shipped to Portugal from where much of it, until 1548, was shipped on to Antwerp for distribution throughout Europe.

Nutmeg and mace were also extremely important finds. They came from the Banda archipelago, a small island group south of the Moluccas at the easternmost end of Indonesia. Interestingly, nutmeg and mace, two distinctly different spices, came from the same source, the nutmeg tree (*Myristica fragans*), an evergreen that can grow to 20 meters. In size and color, its fruit resembles a peach. When ripe, it bursts open to reveal a crimson stone. The crimson, in fact, is the mace, a membrane that encircles a shiny black seed, within which is the kernel, the brown nutmeg.

The most unexpected find from the wreck was gold. On February 24, 2002, a small decorated bowl was recovered and soon after the divers were regularly finding small "bun" and "finger" ingots, as well as numerous granules, small amorphous nuggets and pieces of broken jewelry, which presumably were intended for recycling. The mixed nature and complete absence of any stamps, endorsements or assayers' marks on the ingots indicates that this was a private hoard rather than official bullion.

The discovery that arouses most academic interest was the Ming porcelain. A total of 960 pieces were recovered, of which 501 were intact or semi-intact. These represented 22 different forms painted with 87 different or contrasting artistic designs. They were virtually all blue and white and dated to the





Above: The discovery of gold changed the nature of the excavation. For safety and security reasons the Minister of Culture instructed that the discovery must remain a secret until all digging was over and the gold was in the hands of the government bank in the capital, Maputo. This picture features a selection of 'bun' and 'finger' ingots from the wreck. Opposite right: The expedition team takes a break in front of one of the stone forts.

Jiajing Period (1522–1566). It is the earliest major porcelain cargo from a European ship of the da Gama age, representing the finest dated document we have on the style of export porcelain that comes after the classical period, which closed ca 1521 with the death of the Emperor Zhengde, and before the more degenerate export wares of the Wanli period (1573–1619). It can be argued that, because of its tight dating and secure provenance, the Fort San Sebastian cargo, as an art-historical statement, is more important than the Jiajing holdings from the Topkapı in Istanbul, the Ardebil Shrine in Iran, the Santos Palace in Lisbon, and the Schloss Ambras outside Innsbruck. The Fort San Sebastian cargo will become bedrock-study for anybody with a special interest in porcelain of the Jiajing period.

Of all living things depicted on the porcelain, birds were the most common. Their range, however, was small; most are of the generic song-bird type, others included parrots (often featured in association with peaches), long-legged water birds, and birds of prey. The most prominent of the birds was the crane. Its grace and long proportions made it a natural favorite of painters, and its Taoist associations as a symbol of long-life ensured its popularity with both the educated elite and the peasant masses who at this time shared a preoccupation with longevity. The finest depictions were highly elegant and

minutely observed; others—usually within medallions—though pleasing, were more workman-like, while those on the flat-rimmed dishes were barely worth a glance.

The mythical bestiary from the cargo consists of dragons, *qilins*, Buddhist lions, and flying horses. No representations of the phoenix were found. The dragon may not have been the most common of the supernatural animals within the cargo, but it was certainly the most assertive. This is not surprising as dragon-lore was at the heart of Chinese mysticism, and its imposition on Chinese thought, art, and daily life was deep-felt and pervasive. Then, as now, the dragon was the dominating symbol of all things Chinese.

The most common of the fabulous animals from the cargo was the *qilin*, a creature that was second in importance to the dragon and had close links with Confucianism. According to Chinese beliefs, it had the head of a dragon, the body of a deer, the scales of a carp, the tail of an ox, and the cloven hooves of a goat. It was a benevolent creature renowned for its gentleness and inability to hurt any living being. It was emblematic of peace and enlightenment and virtuous leadership. Not surprisingly, it was later associated with the goddess of mercy, Kuan-yin.

The non-mythical animals depicted on the porcelain included the tiger, elephant, and buffalo. Those bearing the latter in particular have a freshness and vitality that is deeply pleasing and rewarding of study. As with all the figure compositions, the players—in this case herders—are well up front and on a single plane; in both action scenes and those of repose the figures are well expressed and though at times body and drapery may be a little stylised, they are always convincing. Especially notable are the portrayals of old age on buffalo bowl no. 1602 in which loss of agility, absence of strength, and all the other afflictions of advanced years are portrayed with almost painful reality.

The most interesting designs were those that featured people or storytelling. Five of the designs, all on bowls, depicted human activity. These were generally stock themes that involved fairly well-established iconographies. Though they may not be inspired works, they betray little tiredness and none of the artistic debasement that characterized some of the bird and botanical themes from the wreck.

Although we knew from the style of the painting that we were in the third quarter of the sixteenth century, we could not further pinpoint the date. The breakthrough came on August 28, 2002, almost 15 months after the excavation had started, when a dish was excavated that had been beautifully painted with a white hare at center. This was the so-called "moon hare," a common symbol of longevity in Chinese art. It was said to live on the moon where it ground and mixed the drugs which made up the elixir of everlasting life. It was believed to live a thousand years and only turned white when it completed half that span. Turning it over, we found to our further delight that its underside featured a rare date mark that corresponds to 1553 in the modern calendar.

This does not, however, mean that our wreck sank in

1553. It would have taken time for this piece to have reached market; but probably not much, for capitalism depends on being profitable. The potters and middlemen in China would not have been able to afford to have their products sitting around in warehouses for long. Bearing all this in mind, the most likely date for the Fort San Sebastian wreck is the five-year period between 1553 and 1558.

On May 14, 2004, 126 duplicate pieces of porcelain from the wreck, along with some of the gold, were auctioned by Christie's of Amsterdam. The issues here are contentious and must be addressed. In broad terms it can be said that most developing nations with a seaboard have neither the funds nor the technical capability to protect, or excavate and preserve, their submerged cultural heritage. For such countries archaeology is a luxury, their financial resources—quite properly—must be focused on education, housing, healthcare, and feeding themselves. Yet, their underwater heritage, it can be argued, is more important than that of Europe, for if archaeology is about new information, then an early sea-going dhow in Mozambique would be of greater significance than, for instance, another Roman ship in Europe which is unlikely to tell us much we do not already know.

The issue, however, is not one of who knows most about what; the issue is that the maritime heritage of the Indian Ocean countries is virtually impossible to protect and is disappearing fast. Sport-diving—with its insatiable appetite for souvenirs—has now reached the remotest corners of the developing world. We are in a race to save the world's submerged heritage. It is a race we are losing.

Of the more than 100 wrecks I have examined during my career, all, to one extent or another, had been plundered. The Fort San Sebastian wreck was no exception, it had been massively looted; bronze guns were taken in the 1960s and porcelain in the 1990s. What we recovered were just the left overs. When work began on the island of Mozambique there were two teams of treasure hunters active in the bay. Because they were within our licensed area they were compelled to leave. But this does not mean they ceased operations, it just means they moved out of zone and are currently still at work. There is nothing we can do to stop the looters, except to be there first.

Had we not properly excavated the site and prepared its

finds for scientific publication, there is no doubt that the looting would have continued until there was nothing left. None of this is surprising as treasure-hunting is cheap and easy, the overheads are relatively low and, because it is fundamentally smash-and-grab work, productivity can be high. Our work, by contrast, because it involves teams of specialists who are constrained in what they do by archaeological principles, procedures, and paperwork, is slow and costly—very costly. The current project, which has lasted over three years, and resulted in a mere 960 pieces of porcelain (of which only 189 were intact), has cost nearly two million dollars with no end in sight.

Nobody on the team liked the idea of selling material from the wreck, some of us railed against it, but none of us—despite all our years of experience—had any workable alternative solutions. The only other option was to do nothing, but that would have resulted in the destruction of the wreck and the total loss of the information it contained. Until we can find other solutions, we have to be practical. In the introduction to the Christie's auction catalog, Jacinto Veloso, head of Património International, a non-profit company set up under the Mozambique Ministry of Culture, wrote: "The fact is that all previous attempts to save our wrecks have failed, and although now some of the duplicate items have [had] to be sold to off-set the cost of the operation, the nation has retained all the 'unique' pieces and all those of special archaeological or art historical importance, as well as the best representative selection of everything else (chosen by an independent, government-appointed porcelain expert); whereas before we had nothing in our museums of the great ceramic trades that passed through our waters, we, that is to say the nation of Mozambique, now possess the finest collection of provenanced export porcelain in the entire Indian Ocean basin." ■

MENSUN BOUND, excavation director for the Fort San Sebastian Wreck, is the author of *Lost Ships: The Discovery and Exploration of the Ocean's Sunken Treasures* and editor of *The Archaeology of Ships of War*. The excavation of the Fort San Sebastian wreck was conducted under the joint auspices of *Arqueonautas S.A.*, a Lisbon-based marine archaeological company, and *Património Internacional S.A.R.L.*, a non-profit company set up under the authority of the Mozambique Ministry of Culture. The author would like to thank the CEOs of the two companies, Count Nikolaus Sandizell and Gen. Jacinto Veloso, and (in alphabetical order), Leonardo Adamowicz, Carlos Andrade, Helen Ford, Angela Kane (Ministry of Culture), Francis Pope, and Stefan Rieck (*Deep Sea Exploration*).

