8

A WORLD ENCOMPASSED

In June 1635, the Spanish barbers (that is, bloodletters) of Mexico City protested to the viceroy about the presence of Chinese barbers there. The viceroy referred the matter to the city council, which in its turn recommended to the viceroy that he limit the number of Asian barbershops to twelve, and that they be restricted to the suburbs, as was the practice with foreign merchants in Spain. Exactly what the viceroy eventually decided is not known.[1]

Less than a generation later, in 1654, twenty-three Portuguese-speaking Dutch Jews arrived in New Amsterdam—supposedly the first of their religion to come to North America. The Dutch governor of the city, Peter Stuyvesant, tried to deport them, but his bosses—in the West India Company, not in the Dutch government—allowed them to stay. The Company's decision carried restrictions: the Jews could not engage in business on their own, and "The poor among them should not become a burden to the Company or the community but be supported by their own nation."[2] That they arrived from Brazil on a French ship attracted no particular notice.

Nearly three centuries later, in 1931, an eleven-year-old Australian boy took an afternoon walk along sand dunes near the beach about sixty miles north of Perth. He came across forty silver Spanish coins dating to the same era as the Chinese barbers and Dutch-Portuguese Jewish immigrants. Not until 1963 would spearfishers several miles offshore come across the mother lode of this booty—the shipwreck of the *Vergulde Draek* ("Gilt Dragon"), a ship of the Dutch East India Company containing thousands of coins, which had sailed from Holland in 1655.

How, in the middle of the seventeenth century, had Chinese barbers gotten to Mexico City? What, less than two decades later, were a shipload of Jewish Portuguese-speakers from Holland doing in Brazil? Why was the West India Company, a privately held concern, making government policy

decisions in New Amsterdam? And how, nearly a century before Australia was "discovered" by Captain James Cook, did a Dutch ship full of Spanish silver coins come to rest on the seabed off its far western edge?

Answering these four questions tells us a great deal about the remarkable worldwide expansion of the global economy that began in the wake of the voyages of discovery. In doing so, we shall expose the roots of today's globalization and its discontents. But first, we must understand five things.

First, within a few decades of Columbus's second voyage in 1493, the exchange of crop species such as corn, wheat, coffee, tea, and sugar between continents had revolutionized the world's agricultural and labor markets. The changes did not always improve the human condition.

Second, by the early seventeenth century, Spanish and Dutch mariners had decoded the last great secrets of the planetary wind machine, allowing them to cross the vast expanses of the world's oceans with relative ease. By 1650, goods of all kinds and people of all nations ranged over most of the globe.

Third, the discovery of huge silver deposits in Peru and Mexico produced a new global monetary system (along with a fearsome inflation caused by the coining of too much silver money). The most common piece of currency, the Spanish eight-real coin, was as ubiquitous as the American hundred-dollar bill and the Visa card are today.

Fourth, the seventeenth century saw the rise of a completely new trading order—the publicly held joint-stock corporation. These organizations had considerable advantages over what had preceded them: individual peddlers, their families, and royal monopolies. Large corporations soon came to dominate global commerce, a position they have not since relinquished.

Finally, change always makes some people unhappy. In the new global economy of the sixteenth and seventeenth centuries, textile manufacturers, farmers, and service workers were all hurt by cheaper and better products from abroad. They were just as vociferous then as French farmers and American autoworkers are today.

To untangle the mystery of the Chinese barbers in Mexico, we must delve a little more deeply into the history of silk. Sometime around 3000 BC, the first woven fragments, red-dyed ribbons and threads, appear in the

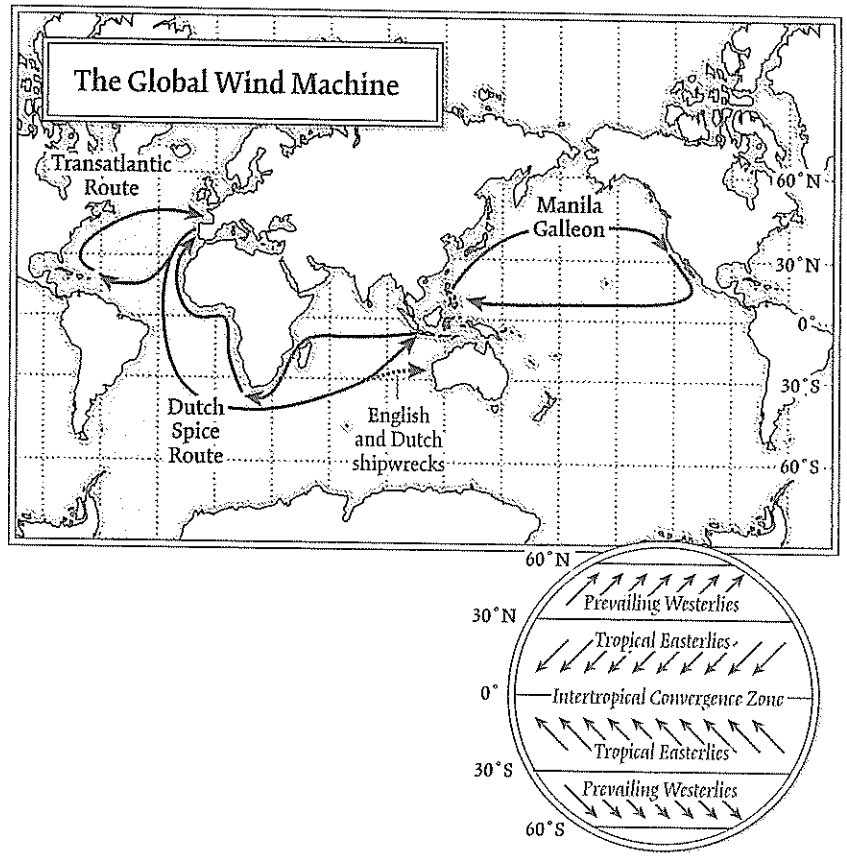
Chinese archaeological record. Chinese myth credits Lady His-Ling, who lived around 2650 BC and was the chief wife of the emperor, with discovering the fabric when she rescued a cocoon that had accidentally dropped from a mulberry tree into a cup of hot tea.

Unlike nutmeg and clove trees, which grow in only a few habitats and climates, the silkworm and the mulberry tree thrive in many locales. Sooner or later, the Chinese were bound to lose their monopoly on silk production. Amazingly, this did not happen until the Han-Roman trade explosion of 200 BC to AD 200, when the blind and almost immobile worms were transplanted to Korea and Japan. They then traveled west toward central Asia, the Middle East, and Europe along both the overland and the maritime routes.

In the sixth century after Christ, the Byzantine emperor Justinian gave two monks the task of procuring the treasured worms from China. (It was not necessary to purloin mulberry trees, since various species already grew throughout Eurasia.) At great peril, they eventually succeeded, and their feat gave rise to a vigorous silk industry in Spain and Italy.[3] Not all the European efforts at sericulture did as well; a nascent silk industry in England fizzled in its cold, wet climate. Nor did silkworms thrive in England's American colonies. The Spanish had only slightly better luck in Mexico, where almost from the time of Cortés, Eurasian silkworms produced a coarse, inferior fabric.

By the late sixteenth century, Spain had given up on its attempt to eject the Portuguese from the Spice Islands and retreated north to the Philippines. When the Spanish founded Manila in 1579, within relatively easy sailing range of south China, they eclipsed these meager European and American efforts at sericulture. Almost instantly, an immensely profitable trade in New World silver and oriental silk exploded over the unimaginable expanse of the Pacific Ocean. This semicircu-lar route, shown in the map on page 201, pushed the limits of the era's maritime technology.

In order to understand how Spanish ships made this twenty thousand-mile round-trip, the earth's prevailing wind patterns must be understood. Mariners had for centuries harnessed the Indian Ocean monsoons, but away from Asia these seasonal phenomena play only bit roles, overshadowed by two main wind systems, both of which blow constantly through-



out the year. The first system, taken advantage of by Columbus, and even more spectacularly by Magellan, blows from east to west in the tropical latitudes (or, more accurately, from the northeast above the equator, and from the southeast below it). The second system blows in the opposite direction—from west to east—in the temperate latitudes, most strongly between forty and fifty degrees latitude in both the northern and southern hemispheres (roughly even with Venice and the southern tip of New Zealand, respectively).[4]

The *Trinidad,* from Magellan's expedition, was the first to sail this high-latitude wind system across the Pacific during its ill-fated attempt to flee westward in 1522. In 1565, two ships from another Spanish expedition—one under the command of Alonso de Arellano, and another,

two months later, under Friar Andrés de Urdaneta—became the first to ride the west-to-east system completely across the northern Pacific in the course of their twelve-thousand-mile journeys from Manila to Acapulco. They covered the distance in just four months.[5]

These two ships were the forerunners of the annual "Manila galleons." Once a year, a treasure flotilla from Mexico, usually consisting of two large merchantmen, weighed down with silver and guarded by a heavily armed galleon, ventured westward along the equatorial route, pioneered by Magellan, to Manila. The silver was exchanged for oriental luxury goods, mainly high-quality Chinese silk, which had been brought in junks from the southern coast of the Ming Empire to the Philippines, and then shipped on the Manila galleon east to Acapulco.

In this manner, the Spanish wealth of Croesus was exchanged for the sublime luxuries of the East. In 1677 an Irish friar, Thomas Gage, wrote of Mexico City, "Both men and women are excessive in their apparel, using more silks than stuffs and cloths." He was amazed at the thousands of coaches cruising back and forth across the colonial city's fabled main street, the Alameda, which were "full of gallants, ladies, and citizens, to see and be seen, to court and to be courted." In the jewelry district, "A man's eyes may behold in less than an hour many millions worth of gold, silver, pearls, and jewels."[6]

The discovery of the "silver mountain" at Potosí in the colony of Peru (now in modern-day Bolivia) occurred nearly simultaneously with that of the ground-level Mexican silver veins at Guanajuato (in 1547 and 1548, respectively). The same excesses played out in Lima as in Mexico City. In the Calle de Mercaderes ("Street of Merchants") in Lima, luxuries could be purchased in dozens of grand shops, some of which were said to contain goods worth over one million silver pesos. In 1602, the viceroy of Peru wrote to Philip III:

> All these people live most luxuriously. All wear silk, and of the most fine and costly quality. The gala dresses and clothes of the women are so many and so excessive that in no other kingdom of the world are found such.[7]

This vast redistribution of wealth jolted an already turbulent global economy. As always, there were losers as well as winners. Who was

hurt? The Spanish barbers of Mexico City saw themselves as victims, exposed to a seventeenth-century version of unfair competition from cheap immigrant labor. They assured the viceroy that their desire to exclude the Chinese bloodletters was based only on the national interest. They sought merely to protect the public health from the inferior ethics and ability of their Chinese counterparts, noting that whereas the Europeans had "with so much diligence . . . cared for the prevalent sicknesses," many having died in the process, "the supposition is that these Chinese are of no benefit."[8]

Far larger interests were being hurt, of course, than a few Spanish barbers. Foremost among them were the Spanish and Mexican silk industries, which could not compete in either price or quality with the bales of Chinese fabric conveyed by the Manila galleon to Acapulco.

In 1581 direct voyages between Manila and Peru commenced; the very next year the Spanish crown, at the behest of Spain's silk growers, forbade such shipments. But merchants and bureaucrats alike in Lima and Mexico City routinely ignored crown edicts, and this one was no exception. In a futile effort to stop the trade between Manila and Peru, the edict was repeated in 1593, 1595, and 1604.

In 1611, the viceroy in Mexico City, under pressure from producers in and around Puebla, just southeast of the capital, argued unsuccessfully that the Manila galleon trade should be forbidden entirely. Spanish and Mexican silk producers even saw the coastal commerce between Peru and Mexico as a threat, fearing that Chinese silk, once unloaded in Mexico from the East, might be transshipped to Peru, or if smuggled into Peru from Manila, reshipped to Mexico. At their behest, the crown, amazingly, prohibited trade between its two biggest New World colonies: "Therefore, we order and command the viceroys of Peru and New Spain [Mexico] to prohibit and suppress, without fail, this commerce and trade between both kingdoms."[9] As with the ban on Manila-Peru traffic, this unenforceable edict was reissued, in this case no fewer than five times after its original proclamation in 1604.

Trade diasporas soon formed around the Filipino-Mexican trade in silk and silver. Silk merchants from both the Philippines and Mexico crossed the Pacific to establish trade colonies. Those who had settled in the Philippines, called Manileños, struck first, sailing east to Mexico and making vast

middleman profits from their warehouse stores in Acapulco and the capital. The Mexican merchants then turned the tables by sending their own agents west to Manila.

Once again, established interests objected. The Manileños saw themselves as the founders and rightful beneficiaries of the silk trade. Unhappy at the loss of their monopoly with the arrival of the upstart Mexicans in Manila, they complained to the governor of the Philippines. As the Spanish barbers had done before them and generations of protectionists would do after them, the Manileños attempted to state their case in terms of the national interest: "One of the things which has ruined this land is the large consignments of money which rich persons in Mexico send here."[10] The crown responded with an easily evaded edict prohibiting the sending of money and agents from Mexico; its ineffectiveness was underscored by its repeated reissuance over subsequent decades.

The Spanish in the Philippines got not only their silk exports from China, but also their food staples and labor, both in short supply in the new Asian colony. Colonial authorities established Parián, just outside Manila, as a residence for Chinese immigrants, and within a few decades more than twenty thousand Chinese were living there. In 1628, the Spanish governor admitted of the Chinese, "There is no Spaniard, secular or religious, who obtains his food, clothing, or shoes, except through them."[11] Wealthy Manileño merchants, Mexican agents, and colonial officials all acquired Chinese servants, many of whom made their way from Parián to Acapulco on the Manila galleon. Hence the protectionist reaction to Mexico City's Chinese barbers, four centuries before cheap Asian electronics and riots at meetings of the World Trade Organization.

North America's first Jews came an even greater distance. Their story begins in 1496, when King Manuel I of Portugal issued an ultimatum to them—convert or leave. Many departed for Amsterdam. (The Jews who converted and stayed became known as *cristãos novos*—new Christians—and many of them served the *Estado* in the East. Manuel extended to the Jews the medieval version of "Don't ask, don't tell"; thus those who remained and did not convert should have been protected from inquiry until 1534. But Manuel's offer was a ruse; in 1504 and 1505 many were slaughtered.) When, a hundred years later, Portugal and Holland battled for control of long-distance trade, Portuguese Jews in Holland found themselves at the center of the conflict. In Asia, this struggle revolved around spices; in the New World, another cargo took center stage: sugar.

Today sugar, a bulk commodity, sells so cheaply that it is given scarcely a second thought: the average American today consumes sixty-six pounds per year; the average European consumes eighty-seven pounds. Yet during the medieval period, it was considered a "fine" spice, as rare and expensive as cloves, nutmeg, mace, and cinnamon. Economic historians estimate that during the fifteenth century, per capita consumption in Europe was just one teaspoon per year.[12]

It is not too much of an exaggeration to call sugar the heroin of foodstuffs. Babies will consume a solution of glucose in preference to water, and no human society or culture rejects the consumption of granulated sugar, even when a population is physically intolerant to it, as some Inuit tribes are.[13] Sucrose is the only chemical that humans will happily consume in pure form. In virtually every part of the world, its per capita consumption has increased steadily over the course of recorded history.[14]

The English, in particular, have a sweet tooth, and it dates back centuries. Consider the description of Queen Elizabeth by the German traveler Paul Hentzner, from around 1595:

> Her face oblong, fair but wrinkled, her eyes small, yet black and pleasant, her nose a little hooked, her lips narrow and her teeth black, a defect the English seem subject to, from their too great use of sugar.[15]

If sugar is so addictive and grows so easily, why didn't it spread more rapidly from its southeast Asian homeland? The cane plant, *Saccharum officinarum*, requires a frost-free growing season of about twelve to eighteen months, steady and copious rainfall or irrigation, and year-round temperatures averaging more than seventy degrees Fahrenheit. Cane harvesting and the subsequent extraction of pure, granulated sugar from the cut stalks are hot, backbreaking work that consumes vast amounts of both fuel and human effort.

The production of sugar is as much an industrial process as an agricultural one, and occurs in three stages. First, the cane is crushed to

release the sweet cane juice. For millennia, this was accomplished with crude, inefficient mortar-and-pestle devices, and cane juice was therefore a luxury product, even where abundant slave labor was available. Next, the sweet juice has to be reduced by boiling it down to a concentrated sucrose solution, a process that requires a large amount of fuel. Finally, the solution is repeatedly heated and cooled in a refining process that separates out the sugar into granules of purity ranging from clear crystalline rocks to a brown residue—treacle or molasses—that cannot be further crystallized. This final process, sugar refining, not only consumes yet more fuel but also requires great skill, so much so that during the colonial age it was accomplished mainly in the advanced industrial centers of Europe.[16]

The natives of New Guinea were probably the first to domesticate sugarcane, sometime around 8000 BC. Its cultivation spread rapidly to southern China, Indochina, and India, where it flourished in their warm climates. Solid sugar does not appear in the historical record until its mention in Indian religious documents from AD 500.[17] Later, Muslim conquerors and traders exported both the cane plant and the techniques for refining it to the Middle East and Europe. Thus the old adage: "Sugar followed the Koran."[18]

But just barely. Muslims grew *Saccharum officinarum* in the few narrow strips of the Middle East and Mediterranean blessed with water from rainfall or irrigation: the Nile Valley, the coasts of Palestine, northern Sicily, Spain, Crete, and a few mountainous river valleys in Morocco. Farther north, the climate was too cold; farther south, there was not enough water.

When Europeans took over many of these areas after AD 1000, they inherited cane cultivation and the craving for sugar. The Portuguese transplanted production to their newly discovered tropical Atlantic colonies: first to the Atlantic island of Madeira, then to the Azores, and later to São Tomé, an island off the coast of equatorial Africa. These fertile islands had easy access to slave labor and provided plantation owners with far better conditions than those in the Middle East or the Mediterranean. Growers were particularly attracted to São Tomé, which was uninhabited when the Portuguese arrived in 1470, yet close to the heart of the central African slave trade.

Even with the cultivation of the Atlantic islands, sugar remained a luxury item, as production was still not widespread enough to make it a mass good. Two problems continued to hamper growers: a lack of efficient cane-crushing devices and a shortage of fuel. The first problem was remedied sometime around 1500 with the invention of the three-cylinder mill, which could be driven by water or animal power. This device consisted of three adjacent vertical rollers and could be run by only three men: one tended the waterwheel or draft animals that provided the power, and two continuously fed the cane through the rollers to each other. The second problem, lack of fuel, resulted from the deforestation of the Middle East, Europe, and soon enough, the Atlantic Islands. With the discovery of the endless forests of the New World, this last barrier disappeared.

By the time of Columbus's transatlantic voyages, cane had just been transplanted to the Spanish Canaries, from where his expeditions were staged. It quickly spread throughout the tropics of the New World and touched off an explosion of cane production that powered much of the world economy for the next three centuries. The "sugar belt" of the New World, which spread from northern Brazil to Surinam and up the Caribbean chain all the way to Cuba, attracted large numbers of European settlers lured by the relatively short transatlantic passage, the lack of organized native opposition, and agricultural profits unimaginable in their homelands.

The Spaniards soon lost their newcomer's advantage in the Caribbean to the more industrious Portuguese in Brazil. The first place to feel the shock of the New World's production was the Portuguese island of Madeira. Not only had it been the world's premier source of sugarcane before the discovery of the New World, but it was also the major staging point on the Brazil-Lisbon route. Local producers, hurt by the large amount of Brazilian sugar being dumped into the local markets, demanded, and got, protection. In 1591, authorities in Funchal, the island's capital, forbade the importation of New World sugar and imposed imprisonment or fines of up to a few years' wages on violators.

By 1591, protectionism was already an old story. One reason why the Spanish fell behind in the sugar race was the crippling of the industry in Cuba, Jamaica, and Puerto Rico by political pressure from the original growers in the New World, those on Hispañola.[19]

Over the course of the sixteenth century, Portugal became further disadvantaged by the growing economic strength of Holland and England. Both of these new powers in northern Europe licked their lips at the rich, far-flung, and poorly defended trading empire that Lisbon only loosely controlled, and its great prizes: Asian spices and Brazilian sugar.

The Dutch struck first at the Portuguese overseas empire. The results were mixed. One of their more notable failures to snatch trade and territory from Portugal occurred in South America. In 1630, the Dutch West India Company (WIC), which had been organized seven years before with the goal of cornering the sugar trade, chose as its main base in the New World some delta islands on the Brazilian coast, whose flat, maritime setting reminded its members of home. There they built the city of Mauristaad (modern Recife) at Brazil's easternmost extremity. Initially, things went well for them; over the subsequent decade, they conquered most of Brazil's northern coastline—from Mauristaad to the Amazon's mouth, a distance of about a thousand miles—and thus controlled the lion's share of the world sugar trade. In the seventeenth and eighteenth centuries, sugar and slaves were inextricably linked, so the WIC became a master of the slave trade as well; between 1636 and 1645, it sold at least 23,000 slaves in Brazil alone.

It was natural that the Brazilian expedition of the WIC would be spearheaded by Amsterdam's Portuguese-speaking Jews, who not only possessed the requisite language skills but also were deeply involved in the city's sugar trade, refining operations, and financial markets. The initial success of the WIC greatly improved the status of Dutch Jews. For example, the WIC, unlike the Dutch East India Company, had many Jewish shareholders. At the height of the WIC's operations in Brazil in the mid-1640s, over one-third of its four thousand settlers were Jewish.

At that point, history conspired against the WIC, and, along with it, the Jews of Brazil. Sixty years before, in 1580, Philip II of Spain inherited the crown of Portugal when its own royal line died out. (To Philip, this was only natural; he had Portuguese blood, had been raised by Portuguese courtesans, spoke Portuguese as his main language, and parodied Caesar by saying, "I inherited, I bought, I conquered.") The resultant loose union of Spain and Portugal, which left Brazil and the *Estado da Índia* independent of Spanish control, split apart following the Portuguese uprising of 1640.

Portugal's independence from Spain in 1640 produced two consequences that combined disastrously for the WIC. First, the new Portuguese king, João IV, negotiated a truce in 1641 with the Dutch government, as distinct from the WIC, forcing the company to halt its expansion and suspend its offensive operations against Portuguese ships. Second, the revolt against Spain galvanized Brazil's Catholic Portuguese settlers, who soon rose up against their Protestant and Jewish Dutch overlords. Passions ran high in the cities, particularly Mauristaad, where many Portuguese were deeply indebted to Jewish moneylenders.[20] By 1654, the Portuguese settlers had retaken Mauristaad, and Brazil's Dutch invaders scattered north to Surinam, the Caribbean, and back to Amsterdam.

During the seventeenth century, the Inquisition still raged in both Spain and Portugal. Fortunately for the Jews, the Portuguese commander who captured Mauristaad, Francisco Barreto de Menezes, honored the letter of canon law, which stated that only Jews who had been converted from Christianity were subject to the Inquisition—a nicety not always observed in either Spain or Portugal, where unconverted Jews were regularly persecuted.

Twenty-three of the Jewish settlers boarded a Dutch vessel that was driven by adverse winds to Spanish Jamaica, and for a second time they wound up under the Inquisition's sword. Once again, fortune smiled: the Spanish governor, not wishing to anger the Portuguese or the Dutch, let them go. The refugees found passage on a French vessel, the *Sainte Catherine,* whose captain, after extorting from them what he could, deposited the Jews in Manhattan in 1654.[21]

Again, the modern reader may find the events leading up to the seventeenth-century arrival of the first Jews in New York disturbingly familiar: the sudden displacement of commodity production halfway around the planet, the inevitable calls for protection from the old centers of production, and the migration far from their native lands of those with specialized skills.

That the governor of New Amsterdam, Peter Stuyvesant, worked for a private concern, the WIC, seemed perfectly natural. After all, the Dutch outposts in Indonesia, southern Africa, and the New World (as well as the English bases in India) were almost exclusively trading enterprises; it was only logical that they be run by company men, not government officials.

* * *

By the early seventeenth century, mariners had mastered the world's winds so well that there was nothing unusual about a group of Jews from Amsterdam showing up in New York via Brazil, or about Chinese silk arriving in Mexico, or even Peru, by way of Manila. But one final wind system remained to be discovered.

How or when mariners encountered the southern version of the high-latitude westerlies that blew the Manila galleon from the Philippines to Mexico is unknown. But blow they did in the south Indian Ocean, more fiercely than in the North Pacific, because the Indian Ocean has fewer intervening landmasses—the "roaring forties" of the southern hemisphere. Da Gama and his Portuguese followers briefly took advantage of their weak northern edge on the last segment of the "wide swing" across the south Atlantic around the Cape of Good Hope. Had they but known, they could have ridden these winds almost all the way to the Spice Islands.

In 1611, Captain Henrik Brouwer of the Dutch East India Company passed the Cape, and instead of heading northeast toward India on the summer monsoon, boldly turned southeast into the void and became the first mariner to ride the roaring forties all the way to Java. He reached Batavia (modern Jakarta) just five months and twenty-four days after leaving Holland; by comparison, the usual monsoon route took over a year. Not only was the new route cheaper and quicker, but the crew remained healthier and the supplies fresher in the cooler mid-latitudes. As a bonus, Brouwer was able to avoid the Portuguese at Malacca.

Brouwer's method—round the Cape of Good Hope, head west for seven thousand miles, then turn left—became standard procedure for European mariners for the next three centuries.[22] The trick was knowing when to head north to thread the Sunda Strait between Java and Sumatra. John Harrison's marine chronometers, which could accurately measure longitude, would not come along for another 150 years, and many a Dutch and English ship failed to make the turn and got carried "beyond the bend" (as Coleridge's ancient mariner, cursed for shooting an albatross, had sailed south of Australia and shot straight into the Pacific). Only the lucky ones returned to tell of their accidental discoveries of Australia's northern and western coastlines.

More often than not, such missed turns proved disastrous, and Australia's coral-studded coastlines became a graveyard for dozens of European vessels. The most infamous of these wrecks was the *Batavia*, which foundered on a reef in Western Australia in 1629. About one-fourth of her three hundred passengers and crew drowned, but the rest made it onto a desolate strand of coral virtually devoid of fresh water. The ship's captain and its head merchant (the latter Brouwer's brother-in-law) reached Java in a small open boat. When rescue crews arrived three months later, they found a horror beyond description: a small group of mutineers had brutally and methodically murdered most of the remaining survivors. The Dutch East India Company attempted to censor the episode, and given the distances and lack of effective communication and transport, it nearly succeeded. The lurid events took decades to leak out and transfix the world with the story of how Europeans, in a wild place beyond the reach of law and civilization, slaughtered each other.[23] (Hereafter, the Dutch East India Company will be referred to by its Dutch initials—VOC—or, in the appropriate context, simply as "the Company.")

Mankind's hard-won command of the world's winds gave rise to a new monetary system, in many ways the forerunner of today's global credit and payment mechanisms, that bought the imported luxuries demanded by the covetous of both the Old and New worlds. Ships that traveled west on the roaring forties route carried the trade goods most in demand in Asia: fine European textiles and precious metals, most of which had been minted in Mexico and Peru into eight-real "Spanish dollars," or pieces of eight. This coin, which flooded the European currency markets in the sixteenth century, was approximately the same size and weight as the Bohemian thaler—from which the word "dollar" derives. (Since eight reales equaled one "dollar," and the coins were too unwieldy for everyday use, they were frequently broken up into eight one-real pieces, hence the term "piece of eight," and the nickname of the quarter-dollar, "two bits.")

The Spanish minted an enormous number of these coins. Their total production is unknown, but in the decade between 1766 and 1776, more than two hundred million coins, each weighing slightly less than an ounce, were produced in Mexico alone.[24] Between the sixteenth and nineteenth centuries, the piece of eight, particularly the trusted Mexican coin, was

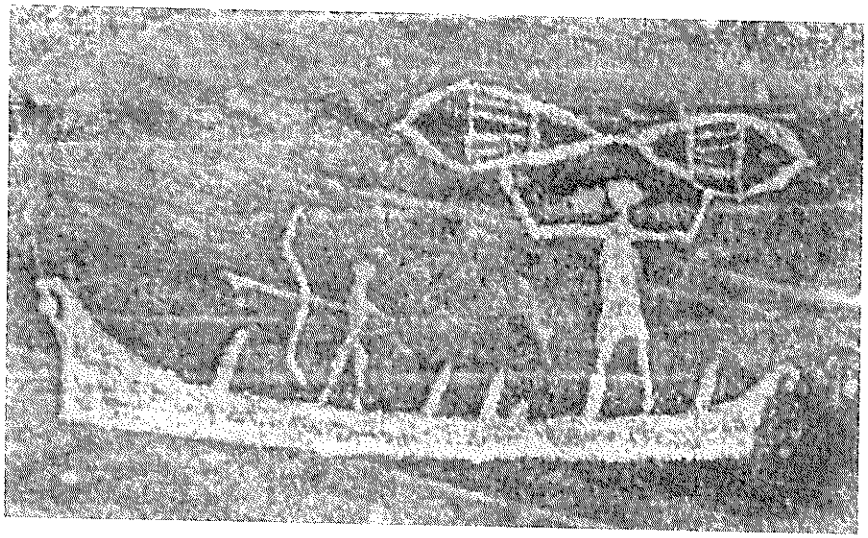
the de facto world currency. Whether in the hands of the mighty trading companies or a lowly local merchant, Spanish dollars paid for nutmeg in the Bandas, calicoes in Gujarat, silk in Manila and Mexico, coffee in Yemen, and cinnamon in Sri Lanka.

The coin tended to disappear and reappear according to monetary conditions. For example, in India in the late seventeenth century, when silver was highly sought-after, it rapidly found its way into crucibles where it was melted into rupees or jewelry.[25] By contrast, in the United States the Spanish dollar was considered legal tender until 1857.

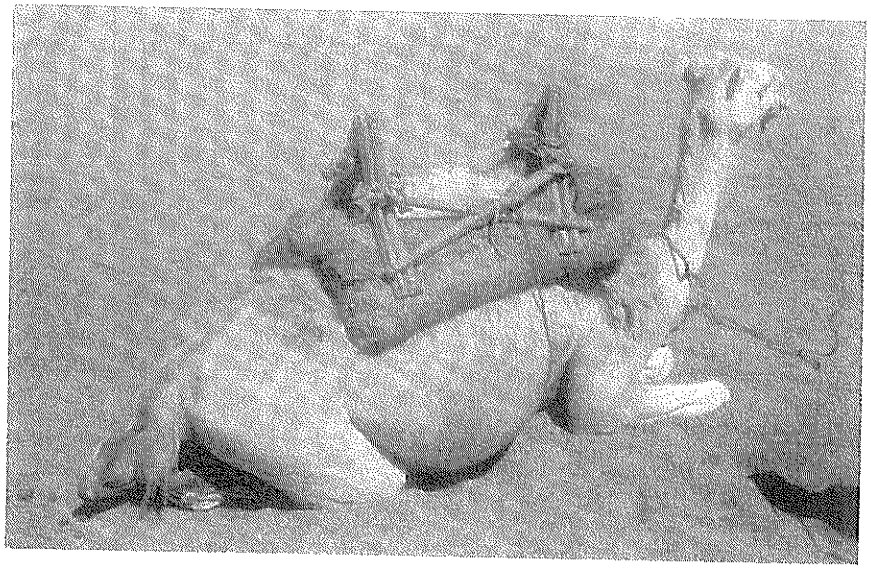
From the perspective of the Dutch Company, the loss of treasure on Australia's reefs was at least as grievous as the loss of life. The rescue mission sent to the *Batavia* carried expert Dutch and Gujarati divers, who recovered ten of the ship's twelve chests of Spanish silver. When the *Vergulde Draek* failed to make the turn in 1656 and ran aground north of what is now Perth with its eight chests of silver, the crew, passengers, and Company fared even worse than those on the *Batavia*. Only seven of the *Vergulde Draek*'s survivors made it back to Java. The rest were never heard from again, and no trace of the ship's silver was found until three centuries later, when an Australian boy stumbled over some old coins on the beach.

In the 1960s, Australian archaeologists recovered approximately half of the estimated 46,000 coins loaded into the vessel's chests in Holland. The wreckage had been partially ravaged by looters, some of whom used explosives; this caused a public outrage that resulted in legislation protecting Australian archaeological sites.[26] Interestingly, almost all the coins carried the "M" stamp of the Mexico City mint, even though about 60 percent of New World silver came from Potosí in Peru and was minted in Lima. The reason for this was simple: the VOC avoided Peruvian coins, since the mint in Lima was notoriously corrupt, and its coins were often debased. In 1650 the officials responsible were punished—at least one was executed—and the VOC did not resume using the Peruvian coins until 1661, well after the shipwreck of the *Vergulde Draek*.[27]

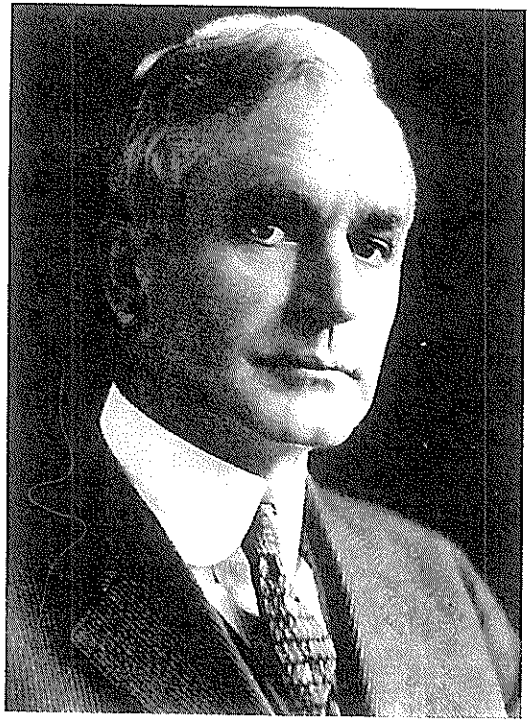
That this huge treasure was the property of the VOC hints that by the mid-1600s, long-distance global commerce had become the domain of multinational corporate capitalism. Over the course of the seventeenth century, the Dutch company would methodically roll up the corrupt, ram-



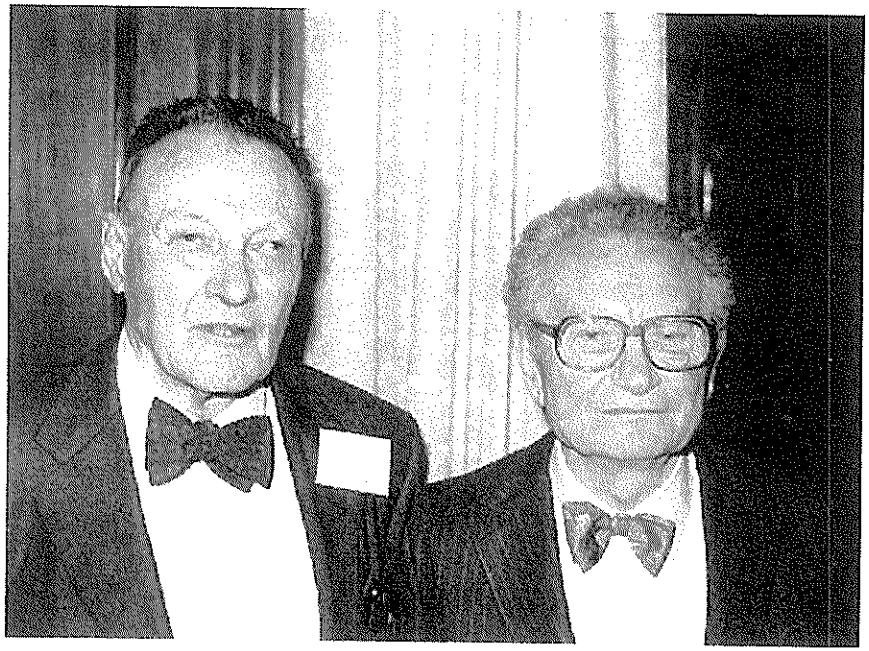
This ancient rock carving from Bergbuten in Norway clearly shows a hunter in the bow of a sewn skin boat. The paddler stands in the rear. Source: *The Earliest Ships*, Conway Maritime Press.



The north Arabian saddle, which has been in continuous use for the past two thousand years, solved the difficult problem of mounting cargo over the soft, moveable hump of the dromedary camel. In one day, a single driver leading three to six animals could convey over two tons of goods thirty miles. Source: *The Pastoral Taureg*, Thames & Hudson.



Cordell Hull, the longest-serving American secretary of state, clearly discerned the damage to world security done by the tariff wars of the early twentieth century and laid the groundwork for the GATT and WTO. *By courtesy of the United States House of Representatives.*



This photograph of economists Wolfgang Stolper (left) and Paul Samuelson (right) was taken fifty years after they developed a theorem that explained who wins, and who loses, with free trade. *By courtesy of the University of Michigan Press.*

shackle Portuguese trading empire, only to face a far more serious threat from another corporate challenger, the English East India Company. The advances in navigation outlined in this chapter would enable these battles to center on European trading posts and plantations around the world. For the most part, they would not be clashes of sovereign armies and navies, but of corporations.