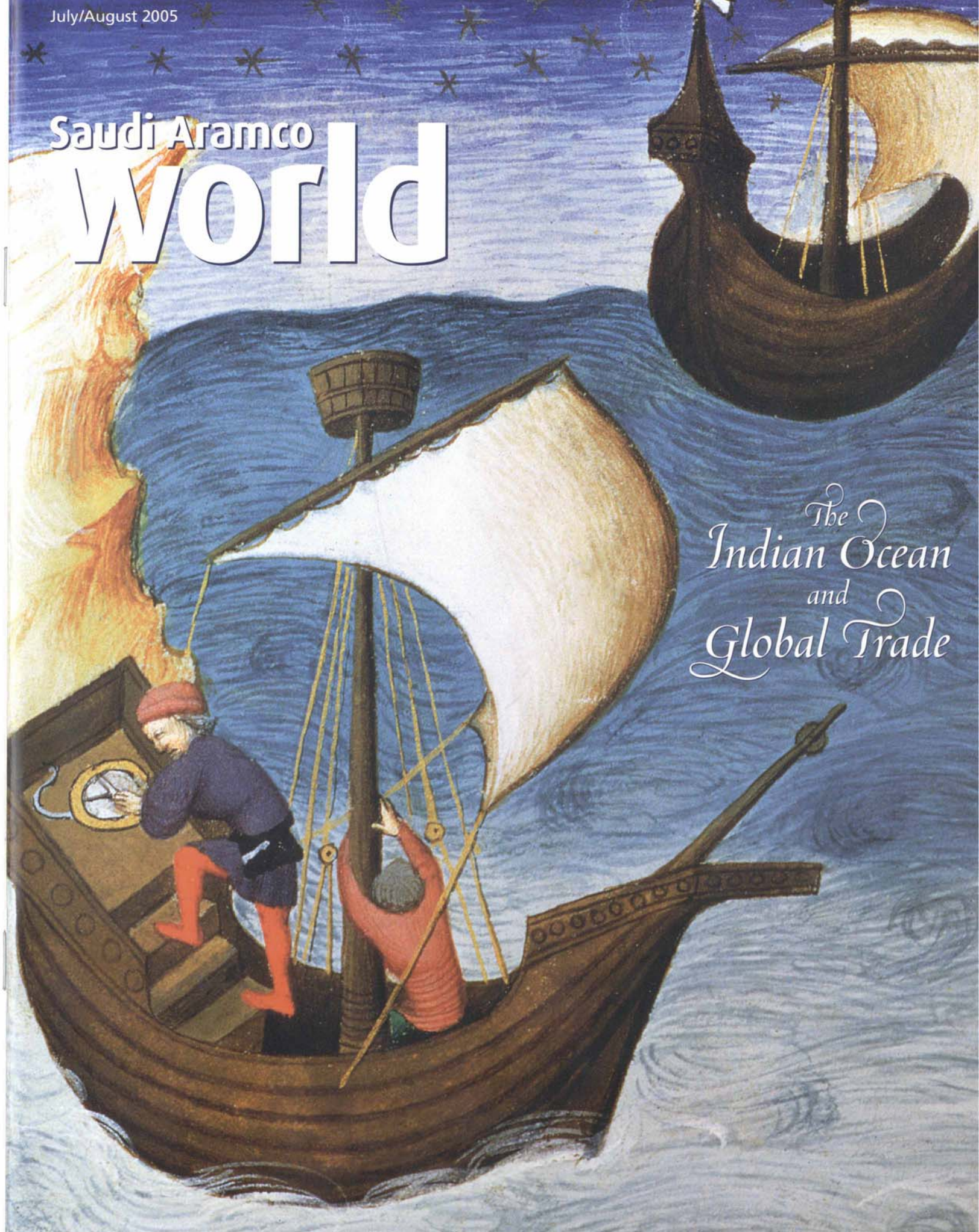


July/August 2005

# Saudi Aramco **world**

*The  
Indian Ocean  
and  
Global Trade*





## 2 The Fable of the Rat

Faced with tales of people and places that were difficult to believe, the Arab historian Ibn Khaldun passed on a cautionary tale about seeing only what we know.

## 4 Monsoons, Mude and Gold

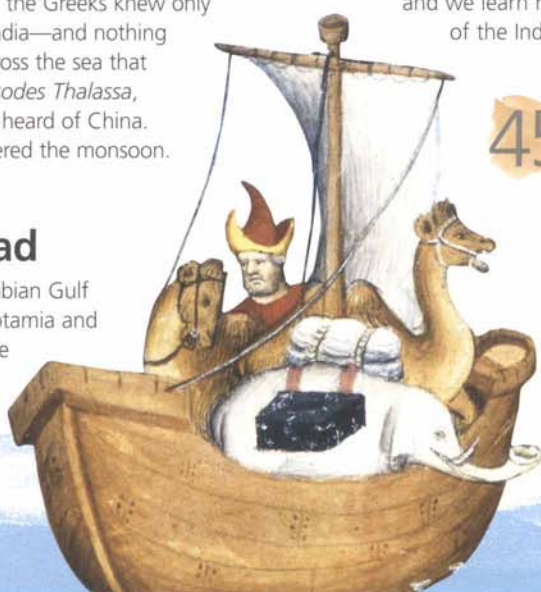
In the Middle Ages, spices and luxury goods from China and the Indian Ocean region reached Europe through the Middle East. Lacking products marketable in the East, Europe was forced to pay for its imports in precious metals. The search for new sources of gold led Europeans around Africa in an attempt to break the Muslim domination of Indian Ocean trade.

## 12 The Leek-Green Sea

In the poems of Homer, the remotest land known is Ethiopia. Until the time of Alexander the Great, the Greeks knew only half-fantastical, hearsay accounts of India—and nothing at all about the spice-laden islands across the sea that the geographer Ptolemy dubbed *Prasodes Thalassa*, “the leek-green sea.” They had never heard of China. But by 125 BC, the Greeks had discovered the monsoon.

## 20 The Seas of Sindbad

Since the third millennium BC, the Arabian Gulf had been a corridor between Mesopotamia and India suitable for the small boats of the earliest traders. In the early Islamic era, the discovery of the sea route from the Gulf to China was as epoch-making as the much later discovery by the Portuguese of the sea route around the Cape to India.



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## 37 The Explorer: Marco Polo

Best known for his overland travels in the late 13th century that opened up European trade with Central Asia and China along the Silk Roads, Marco Polo returned to Venice from China by sea. As on land, he was fascinated by all he encountered at sea. He wrote the earliest and most detailed account of the Indian Ocean through European eyes.

## 41 The Traveler: Ibn Battuta

Visitor to more than 40 lands over nearly three decades in the 14th century, the Moroccan jurist's sojourns on the Indian Ocean took him along all the main trading routes of the maritime system, to East Africa, Oman, India, Indonesia and China. Through his eyes, we have our clearest firsthand account of the ports, the ships, the peoples and the rulers, and we learn how great were the risks of sailing the waters of the Indian Ocean.

## 45 The Admiral: Zheng He

Chinese Muslim admiral Zheng He commanded the largest fleets and the largest ships ever to sail the Indian Ocean until World War II, leading seven 15th-century expeditions that must rank as the earliest state-sponsored efforts to seek out new lands, markets and spheres of political influence. Yet the enterprise was ended as suddenly as it had begun.

## 49 The Navigator: Ahmad Ibn Majid

In the late 15th century, the most famous Indian Ocean navigator of the Middle Ages wrote down the principles of sailing in those waters. How to schedule travel with the monsoons, how to find ports and what to expect in the bays, straits, reefs and open waters were all part of his encyclopedic guidance in a time of Islamic expansion. Among his readers were enterprising seamen in Portugal.

## 54 The Coming of the Portuguese

The Portuguese irrupted into the Indian Ocean with military force, yet failed to monopolize its commerce. They eventually assimilated into the existing trading network, maintaining a monopoly only of the Cape route until the early 16th century. Private Portuguese traders operated with Asian partners and competitors, and the trans-Pacific Manila galleons made the Indian Ocean network global. Then, with the Industrial Revolution, came a colossal reversal of fortune.



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**Author's Note:** The lands around the Indian Ocean do not have the compact geography of the Mediterranean lands nor the shared cultural and economic assumptions, transcending differences of religion and language, that still make the Mediterranean peoples instantly recognizable. No single political power has ever dominated the Indian Ocean the way the Mediterranean was dominated by the Roman Empire.

Rather, the Indian Ocean defines a region of great linguistic, ethnic, cultural and religious variety—there are, for example, more than 200 languages spoken in Indonesia alone. The single unifying factor is the monsoon, blowing from the southwest in summer and from the northeast in winter. It is the monsoon that is responsible for the agricultural prosperity that made the ancient cultures of India, Southeast Asia, Indonesia and Yemen possible. Since classical times, and perhaps before, people have crisscrossed the Indian Ocean, borne by the monsoon winds.

The articles in this issue of *Saudi Aramco World* attempt to describe the monsoon trading system that took its classical form in Islamic times, between the years 750 and 1500. The story of how and why Europeans finally succeeded in breaking out of the prison of their Mediterranean, how they made their way to the Indian Ocean by sailing around Africa and what they found when they got there has often been told. What is less familiar is the story of the formation of the Indian Ocean trading network itself and the role played by Muslim merchants in creating the first truly global trading network.

—Paul Lunde

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### Cover:



In a painting by the early 15th-century Boucicaut Master, mariners off a steep Indian Ocean coast use an astrolabe, one of the navigational tools of Muslim traders in the Middle Ages. Out of sight of land, they measured latitude by the height of the Pole Star above the horizon and longitude by time; they also adopted the compass, invented by the Chinese. Illustration: Bibliothèque Nationale / Bridgeman.

### Back Cover:



A French map by M. Machault, dated 1757, shows the Indian Ocean as the center of an economic region whose trade, reliably regulated by the monsoon, itself affected trade in the Mediterranean, throughout Europe, with the Far East and finally around the world. Map: Bukhari Collection of Antique Maps of Arabia.



# The Fable of the Rat

When Ibn Battuta returned to Morocco toward the end of the year 1349, after nearly 20 years spent touring some 40 lands of the Middle and Far East, the stories he told were received with incredulity. Above all, it was his stories of the wealth of India that his listeners could not credit. Even the famous historian Ibn Khaldun, a man of great culture and experience, was sceptical:

*Most of all, [Ibn Khaldun wrote,] he talked of the ruler of India, saying things that were hard to believe. For example, he said that before going on a trip, the ruler would have a census made of every man, woman and child in the capital.*

*Then he would give orders that all their needs for the next six months be paid out of his own personal income. The day of his return was a holiday and all the people went out into the countryside around the city and strolled about. Mangonels [catapults] fastened to the backs of elephants flung bags of silver and gold coins into the crowds until the ruler entered his audience hall. Ibn Battuta told a number of such stories, and court officials started to whisper that he was a liar.*

*It was at this time that I ran into Faris ibn Wadarr, the sultan's well-known wazir. I told him I didn't believe the man's stories, especially since the court was generally agreed that he was a liar. But Faris said, "Don't refuse to believe things about other dynasties just because you have not seen them for yourself. That would be like the son of the wazir who grew up in captivity.... When the boy attained the age of reason, he asked his father what kind of meat they had been eating. His father told him it was mutton. The boy asked what mutton was and his father described a sheep. 'You mean, father,' said the boy, 'that it looks just like a rat?' The same thing happened when they later ate beef and camel. Since the only animal the boy had seen in prison was a rat, he believed that all animals were like rats."*

Here, in the form of a fable that itself probably originated in India, is neatly encapsulated one of the major stumbling blocks to historical understanding. We are all prisoners of our own time and place, and we inevitably judge the new and strange in terms of the old and familiar. Thus, when

Vasco da Gama returned to Lisbon in 1499, having discovered the sea route around Africa to India, he jubilantly announced to King Manuel that the inhabitants of the west coast of India were Christians: After all, he had visited their churches in Calicut and witnessed their devotion to the image of the Virgin Mary.

We may smile at Vasco da Gama's enthusiastic identification of the Hindu goddess Durga with the Virgin Mary, but errors are inevitable when dealing with cultures remote from our own. Ma Huan, Arabic interpreter to the Chinese admiral Zheng He on his remarkable voyages to the Indian Ocean in the early years of the 15th century, says the ruler of Calicut was a Buddhist. There is no doubt that Ma Huan, a careful and reliable observer in other respects, witnessed the king at his devotions. He knew that, in the distant

past, Chinese pilgrims had visited India to study Buddhism and, unaware that Buddhism had long since ceased to be practiced in India, Ma Huan simply confused an image of Vishnu with that of Buddha.

The chances of misinterpretation are even greater when to geographical, cultural, religious and linguistic remoteness, we add remoteness in time. We are separated by 500 years from Vasco da Gama and Ma Huan, and by almost 2000 years from the Greeks, the earliest Europeans to trade in the Indian Ocean. We are almost unimaginably more distant from the men who first sailed these waters, the speakers of Austronesian languages who, beginning around 5000 years ago, populated Taiwan, the Philippines, Malaysia, the Indonesian islands, Madagascar and the islands of the remote Pacific.

The past is like a long archipelago that recedes over the horizon. The nearest islands are mapped, those in the middle

distance are partially explored, and the farthest are known only by hearsay. The sea that divides island from island corresponds to the intervals of our ignorance, which are plentiful, for the historical record is anything but continuous, and the majority of the islands lie beyond the horizon and beyond our ken, shrouded in the mists of prehistory.

To avoid mistaking a sheep for a rat, like the son of the wazir in the fable, we must bear in mind that the very diverse inhabitants of these metaphorical islands were quite unlike us, the men and women who inhabit the mainland of the early 21st century. It is true that we have something in common with the inhabitants of the nearest islands, corresponding to the 20th, 19th and 18th centuries, for we are still affected by the political and economic consequences of their activities.

But as we voyage farther into the past, to the 15th century—the age that produced men like Zheng He, Ahmad ibn Majid, Vasco da Gama and Columbus—there are fewer familiar landmarks. They are at the edge of our understanding, their minds difficult to grasp and the worlds they moved in not like ours. They have all acquired a mythic dimension that makes their true character and achievements hard to assess. For example, Chinese legend credits Zheng He, admiral of the Ming fleets that explored the waters of the Indian Ocean, with being some three meters (10') tall and possessing superhuman strength. He was venerated as a god, and his life was made the subject of an

adventure novel filled with wonders. The Arab navigator Ahmad ibn Majid was thought by some to have been the pilot who single-handedly unlocked the secrets of the monsoon for Vasco da Gama, guiding him from the coast of East Africa to Calicut. Later generations of Arab seamen remembered Ibn Majid as the greatest navigator of them all, and invoked his name before making the perilous crossing of the Red Sea between Aden and the Horn of Africa.

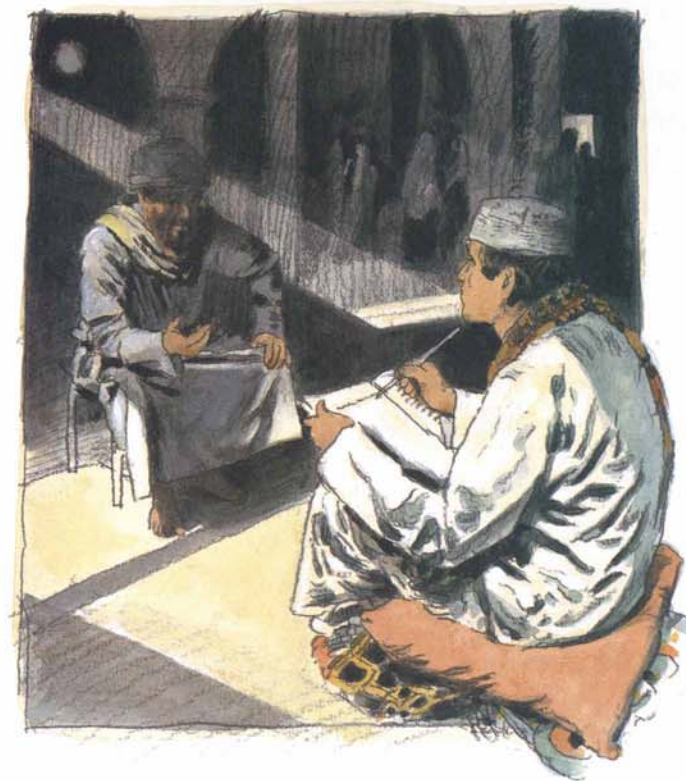
Vasco da Gama and Columbus too are culture heroes, having in common obscure early lives and extraordinary later achievements. The blank spaces in their biographies have been filled by generations of ingenious historians, each transferring his national and personal predilections to his subjects. Thus Samuel Elliot Morrison portrayed Columbus as a hard-headed, practical mariner, impatient of authority,

his aims misunderstood by uncomprehending bureaucrats: a kind of proto-Yankee—a man, one feels, very like Samuel Elliot Morrison. Yet Columbus, as we know from the version of his logbook that has come down to us, from his occasional letters and from the marginalia in his surviving books, avidly read prophecies, hourly expected the end of the world, sought the Earthly Paradise and was convinced to the end of his days that he had discovered not a new world, but Marco Polo's Cathay. The European search for a sea route to India was the working out of a medieval dream, with its roots in biblical and classical tradition, and the men who carried it out were only chronologically men of the Renaissance.

As we move a little deeper into time, things become stranger still. The map begins to blur. It is no longer easy to match the places named in the fragmentary texts we possess to the places we know. Yet these islands of our imaginary archipelago correspond to the period of Islamic expansion into the waters of the Indian Ocean, roughly the years AD 750 to 1500. This era of intense maritime activity saw the establishment of Muslim communities in China, India, Southeast Asia, East Africa, Madagascar and the Philippines. Muslim merchants and shipowners held a virtual monopoly of the maritime transport trade in the western reaches of the Indian Ocean, trading in spices, aromatic gums, dye woods, tortoiseshell, precious gems, textiles, silk, timber, horses, rice, coir, metals and pharmaceuticals, as well

as such bulk cargoes as grains, vegetable oils and dried fish. Muslim traders established merchant colonies in Chinese ports like Canton and Hangzhou. A complex system of Asian trading networks gradually developed on sea and land, one that involved merchants of many different faiths—Hindus, Jains, Buddhists, Christians, Jews, Muslims—and a bewildering variety of ethnic and linguistic groups, including not only Arabs and Persians and Chinese but also Gujaratis, Malabar, Cholas, Kelings, Bengalis, Malays, Indonesians, Bugis and East Africans.

Yet this extraordinary process of development is but poorly documented. It was the work of generations of private individuals of the most varied origins and motives, all of whom were governed, nonetheless, not by any one state or ruler, but by the iron regime of the monsoon. ☉



Ibn Battuta dictated his *Rihla*, the account of his 20 years of travels, in 1354 and 1355. Some of his stories went far beyond what even his sophisticated listeners could believe.



# Monsoons, Mude and Gold

The “global economy” of the Middle Ages was created by linking the Indian Ocean trading networks with those of the Mediterranean Sea and its African and European hinterlands. By the eighth century, Spain and the African shores of the Mediterranean were part of the expanding empire that Muslims called *dar al-islam* (“the house of Islam”) and had commercial links, both maritime and overland, with Egypt and Syria. Between the years 800 and 1000, the Mediterranean was dominated by Muslim shipping.

The Fatimid Dynasty arose in what is now Tunisia in the early 10th century. Their subsequent invasion of Egypt gave them control of the most important port of the eastern Mediterranean: Alexandria. This famous port linked the new Fatimid capital of Cairo, founded in 969, to the whole Mediterranean world via the Nile. With the conquest of Egypt, the Fatimids made a concerted drive to shift the economic center of the Islamic world from Baghdad, capital of their political rivals, the Abbasids, to Cairo. They revived the Red Sea as the principal conduit of maritime trade with the Indian Ocean, restoring that route to the role it had played in Ptolemaic and Roman times.

It was during the Fatimid period (909–1171) that the European economy began to recover from the barbarian invasions that had put an end to the Roman Empire.



Following the season of northeast monsoon winds that carried them from India or places farther east, spices, textiles and other goods arrived at Alexandria via Aden and Jiddah. European traders—mostly from Venice—timed their own arrival in Alexandria accordingly.

on trade with Spain, North Africa and the Black Sea. Synchronized to the clock-like regularity of the monsoon winds in the Indian Ocean was the equally regular sailing of the Venetian convoys, the *mude*, which set out toward the end of August and made their way slowly through the Adriatic and the Aegean to Cyprus and Alexandria, timing their arrival there to coincide with the availability of monsoon-borne goods from the East, and returned to Venice 11

European courts began to demand the goods that the Indian Ocean trading networks supplied to Alexandria and Constantinople. These products, together with ceramics, textiles and sugar from Egypt and Syria, reached European markets almost exclusively through the Italian maritime republics of Amalfi, Pisa, Genoa and Venice. By the 15th century, Venice had eclipsed its competitors and established a virtual monopoly of the eastern trade, leaving Genoa to concentrate

months later. The economies of northern Europe were similarly linked—indirectly, like a train of interlocking gears—to the Indian Ocean monsoon: From Venice, after the return of the *mude*, spices and textiles traveled overland and by internal waterways to the trade fairs of northern Europe. (Another set of gears driven by the monsoon linked the Indian Ocean economies with China.)

In 1204, Venice led the Crusader conquest of Constantinople. A few years later, a commercial treaty with the Mamluk sultan, ruler of Egypt and Syria, gave the Venetians a virtual monopoly of trade at Alexandria, Tripoli and Beirut. Toward the middle of the 14th century, the number of *mude* was doubled.

Until the ninth century, Venice had been part of the Byzantine Empire, and it never lost its half-oriental quality. Just as the physical city seems to float magically on the surface of the lagoon, belonging neither to land nor sea, Venice did not seem to fully belong to the European world in which it was tenuously anchored. Here was a city devoted entirely to trade, with the full apparatus of money, banks, credit and letters of exchange—all uncanny mysteries to most of northern Europe. The Venetian capacity to transform humble products like salt, grain and cloth into gold was to outsiders a kind of alchemy.

The famous Venetian Arsenal, immortalized by Dante in Canto XXI of the *Inferno*, was the largest industrial site in Europe. Galleys were built and fitted out on an assembly-line basis that seemed little short of miraculous to visitors. Pero Tafur, a Castilian nobleman who visited the city in 1438, was astonished to see 10 galleys readied for sea, fully crewed, provisioned and armed, in three hours flat.

He was equally astonished to find Spanish fruit for sale in Venice as fresh and cheap as at home. The markets were full of goods from Syria too, he wrote, and even from India, “since the Venetians navigate all over the world.” But the Venetians of course did not sail to India: The spices and textiles in



Left: Venice struck its first gold ducat in 1282. Within 150 years Venetian ducats had become a widely used currency in much of the Middle East. Center: Muslim rulers had been minting gold dinars since the late seventh century; this one was issued in the mid-13th century by al-Musta'sim, the last Abbasid ruler of Baghdad. Right: This silver dirham was struck at Sivas, in today's Turkey, in 1241 or 1242.

Venice had come from Alexandria, shipped there from India and points east via Aden and Jiddah.

Venice had long dreamed of breaking the Muslim

monopoly of the Indian Ocean trade. A hundred years before Pero Tafur's visit, the Venetian traveler Marin Sanuto put forward a plan to outflank Egypt and seize control of the Indian Ocean trade by launching ships in the Red Sea and the Arabian Gulf. Although impractical, his plan nevertheless reveals the overweening confidence and ambition of the Venetian Republic.

As a maritime republic dedicated to international trade, Venice was an anomaly in a feudal Europe that measured

wealth by land, not money. In 1423, as the Doge Tommaso Mocenigo lay dying, he wrote in his last testament: “If you heed my advice, you will find yourselves masters of the gold of the Christians; the whole world will fear and revere you.” He was stating the obvious: Venice functioned on gold. It was gold that bought their cargoes, gold that supplied their city with grain, gold that built their ships. Sooner or later, the gold of northern Europe and Africa found its way to Venice.

The Venetian gold ducat, first issued in 1282, was of exceptional

THE VENETIANS' COMMERCIAL DREAM, WHICH THE PORTUGUESE WOULD INHERIT, WAS TO BREAK THE MUSLIM MONOPOLY OF THE INDIAN OCEAN TRADE.

## ROMAN GOLD, PERSIAN SILVER

Cosmas Indicopleustes (“Cosmas the Traveler to India”), who wrote soon after AD 547, tells the story of a Roman merchant from Egypt named Sopatro who met the Persian ambassador at the court of one of the kings of Sri Lanka. “Which of your kings is the richest and most powerful?” asked the king. “Ours is the most powerful, magnificent and rich,” answered the Persian ambassador. “And you, Roman, what do you have to say to that?” asked the king. Sopatro answered, “If you want the truth, you have both kings right here. Look at each and see for yourself which is the most brilliant and powerful.” “What do you mean: I have both kings before me?” asked the king. “You have both their coins,” answered Sopatro. “You have the *nomisma* of one and the *drachma* of the other. Look at both and know the truth.” The king ordered both coins to be brought. The Egyptian *nomisma* was of pure gold, splendid and beautiful; the Persian *drachma* was of silver and, to tell the truth, could not compare with the gold piece. The king, after looking carefully at both sides of each coin, praised the *nomisma* and said, “In truth, the Romans are splendid, powerful and wise.”





Left: Through Alexandria flowed much of the Europe-bound Indian Ocean trade that came north up the Red Sea. Constantinople, right, handled much overland Silk Roads trade, as well as maritime trade that came up through the Arabian Gulf and traveled overland through Syria.

purity and was eagerly sought throughout Europe and the East. The year before Mocenigo died, the Arab chronicler al-Fasi could write: "In our time the Venetian ducat has invaded the major cities of the world: Cairo, the whole of Syria, the Hijaz and Yemen, to the point that it has become the most commonly used currency." The ducat undoubtedly voyaged to India long before the Portuguese.

"Gold equals fear plus respect" is a peculiarly Venetian equation. In the feudal world, fear and respect were attributes of kingship. The power of the ruler was derived from his lands and the number of men he could mount. Venice, which had neither king nor lands, made do instead with the king of metals, to which the traditional fear and respect were transferred.

In the Islamic world, gold and silver currency had been issued since 691, when the first dinar was struck at Damascus. Both the coin and the word derived from the Byzantine *denarion*, just as the Islamic silver coin, the *dirham*, was based on the Byzantine drachme. Gold dinar and silver dirham together formed the bimetallic monetary system that Muslim writers referred to as *al-naqdayn*, "the two coins."

In the Islamic world, gold was a tool. Mocenigo's equation, in which fear and respect could be had for gold, would have sounded blasphemous to Muslims, for whom it is God alone who commands fear and respect. Muslims believed that gold and silver must circulate, and this circulation, called *rawaj*, was a social and religious duty. Hoarding gold and silver was

forbidden by the Qur'an: "Those who store up gold and silver and do not spend them in the way of God, tell them of a painful chastisement!" The cosmographer al-Qawini, writing only a decade or so after the minting of the first florin, says:

*Gold is the noblest of the blessings of Almighty God upon his servants, for it is the foundation of the affairs of this world and brings order to the affairs of mankind.... With silver and gold coins, everything can be bought and sold. They must circulate, unlike other forms of wealth, for it is not desirable for anyone to accumulate silver and gold.... Anyone who stores them up destroys the wisdom created by God, just as if one imprisoned the qadi of a town and prevented him from carrying out his duties toward the people."*

On the eve of the Islamic conquests in the early seventh century, however, there was a large and powerful state in which gold, the regulator of the affairs of men, was imprisoned. This was Sasanian Persia. Luxury goods from India, Southeast Asia and China passed through Sasanian hands on their way to Byzantium, but the gold the Byzantines paid for them never returned. The Sasanians themselves only circulated silver.

The Arab conquest of Persia thus released huge quantities of gold into the world economy, first in the form of booty, then in the form of taxes levied in gold. Still more gold was obtained from the church treasuries in conquered Byzantine territories and from taxes levied on the non-Muslim population. And

astounding quantities were obtained from the systematic looting of pharaonic tombs in Egypt, a practice that went on for more than a millennium.

The release of this flood of gold was comparable to the release of the Aztec and Inca gold hoards at the hands of the Spanish conquistadors eight centuries later. Just as the incredible wealth of Mexico and Peru quickly evaporated and forced the Spaniards to look for new sources of precious metals, so the supplies of "old" gold in the victorious Muslim empire soon needed to be supplemented.

There were a number of sources: Russia, Central Asia beyond the Oxus River, Afghanistan, western Arabia (the Hijaz) and the famous Egyptian mines of Wadi 'Allaqi south of Aswan. But by far the richest were in Africa south of the Sahara, the area the Arabs called *bilad al-sudan*, "the land of the Blacks." Alluvial gold was found along the upper reaches of the Senegal and Niger rivers, and along the Guinea coast. These areas, together with gold-bearing regions in southeastern Africa near Sofala, were so productive that by the 14th century Africa was supplying as much as two-thirds of the world's gold.

Overland contact between the North African coast and sub-Saharan Africa probably dates back to the days of the Phoenicians. The introduction of the camel to North Africa in Roman times made regular trade across the Sahara economically viable, but it was not until the foundation in 747 of the caravan city of Sijilmasa, in southern Morocco,

that the gold trade with the south came to be organized on a regular basis.

This was cheap gold. The lands south of the Sahara had no salt, and men suffering from salt deficiency were willing to trade gold for an equal weight of salt. The resulting trans-Saharan trade led to the rise of powerful African kingdoms in the south.

One of the largest was the Mandingo kingdom of Mali, whose rulers seem to have become Muslims sometime during the first quarter of the 12th century. At its height, the kingdom stretched from the Atlantic to the upper Niger. The arrival of the Mandingo ruler Mansa Musa in Cairo in 1324, on his way to Makkah to perform the pilgrimage, caused a sensation. He crossed the Sahara accompanied by thousands of followers and 100 camel-loads of gold attended by 500 slaves—each bearing a golden staff weighing nearly three kilograms (6 lb). Mansa Musa spent so lavishly in the markets of Cairo that the price of gold fell and took years to recover. Stories of his fabled wealth reached Europe. African gold attracted merchants from Portugal, Spain, Majorca, France and Italy, all of whom had traded with North African ports since the 10th century. In the 12th, the Genoese sailed through the Strait of Gibraltar and began trading with the towns on the Atlantic coast of Morocco. In 1253, the year after the first gold coins were struck in Genoa and Florence, they established a trading station farther south in Safi, where they perhaps first learned

## HOW THE MONSOON WORKS

The word "monsoon" comes from the Arabic *mawsim*, meaning "season." In Arabic, *mawsim* refers to the period of time in which ships could safely depart from port, as in *mawsim 'adani*, "the season of Aden." Collectively, these times were called *mawasim al-asfar*, "sailing seasons." The regular periods of northeast and southwest winds that we call the monsoon are called by the Arabs *rib al-azyab* and *rib al-kaws*, respectively.

While there are monsoon systems that affect parts of North America, Central America and northern Australia, the largest is found in the area of the Earth's largest landmass: the Indian subcontinent and eastern Asia. Generally speaking, monsoon systems are powered by the seasonal warming and cooling of very large continental air masses, and depend on the fact that temperatures over land change faster than temperatures over oceans.

From the spring equinox through summer, warming air over southern Asia rises, drawing in toward land the relatively cooler and more humid ocean air. This creates southwest winds heavy with moisture. As the ocean air warms and rises in turn, the moisture condenses, resulting in the torrential monsoon rains.

From the fall equinox through winter, the system reverses as relatively warmer ocean air rises, drawing after it the relatively cooler dry air above the land. This creates northeast winds with cool, sunny and dry weather.

From mid-March, traders knew, the prevailing wind blew from the southwest, and the last ships left Yemen eastbound for India by mid-September, so they could complete their voyage before the northeast monsoon began. Westbound, the first ships left western India for Yemen on October 16, arriving—if all went well—a mere 18 days later. If departure and arrival dates were carefully enough calculated, the turnaround times could be very short.

Each sailing season was divided into two major periods, one at the beginning, called *awwal al-zaman*, "first of the season," and one at the end, called *akbir al-zaman*, "last of the season." Each offered an advantage: The convoys that left during the first of the season found the readiest markets, and those that left at the last had the shortest turnaround time.

Of the two monsoons, the southwest was the more dangerous. In June and July, heavy swells and the famous torrential rains closed the ports of western India. The northeast monsoon, on the other hand, beginning in August in western India, meant clear sailing with steady winds and few squalls. Because it arose on the mainland, it carried little or no rain, and could be sailed with ease throughout its season.



of the gold-producing lands south of the Sahara. These European merchants funneled African gold into the rapidly monetizing European economy. Just as in Roman times, both silver and gold then flowed eastward to pay for imported luxuries, ultimately reaching India and China. The gold that flowed to India never returned. It was hoarded, in the form of temple treasure or jewelry, rather than circulated. Just as Sasanian Persia had been, India was the graveyard of gold.

It was just the opposite in China. Gold held no monetary value to the Chinese, and China always exchanged gold for silver at an advantageous rate, thus draining silver from the world economy. Although it did not serve as currency—the standard currency was copper “cash”—China absorbed vast quantities of silver, which was used as bullion for major payments. And because China paid for her imports with silks and ceramics, silver rarely left the Chinese empire, except as the result of invasion from the western steppes and, in the late 18th century, British insistence that China should pay for opium with silver. Just as India was the graveyard of gold, China was the graveyard of silver.

In fact it has been estimated that between a third and a half of all the silver produced in Mexico and Peru found its way to China. Between 1531 and 1660, the fabulous mines of Zacatecas and Potosí officially sent 16,887 tons of silver to Spain; unofficially, that figure should probably be doubled to include contraband and private exports. Although small by modern standards—world silver production reached 16,117 metric tons in 2004 alone—it was a huge amount for the pre-modern world economy to absorb. A great deal of it went to India too: The coins of the Mughal rulers of India were minted from New World silver. In the late 16th and 17th centuries, the Spanish piece of eight, prototype of the dollar, circulated throughout Asia, finally ending its journey in the Celestial Kingdom. The piece of eight, containing 25.5 grams (about ¾ oz) of pure silver, had become the first global currency, used in all of the New World, Europe and Asia.

This flow of precious metals from West to East is a constant of pre-modern world history. From classical times until the late

18th century, the West had a trade deficit with the East. The imbalance was caused by the failure of European products and manufactured goods, with a few exceptions, to find buyers in the East. Sir Thomas Roe, ambassador to the Mughal court in the 17th century, was chagrined to discover that Indian craftsmen took no more than a day to reproduce the fine gifts, including paintings, that he had brought to the emperor. European merchants who wanted the textiles, ceramics, metalwork, dyestuffs and spices of the Islamic world generally had to pay cash.

The Mediterranean trading network, led by the commercial republics of Italy, was thus driven to a constant search for new supplies of silver and gold. It was this search that led to the Portuguese exploratory expeditions down the west coast of Africa in the 15th century, journeys that culminated in 1498 in Vasco da Gama's discovery of the sea route to India. It was the search for gold that led Columbus to seek an Atlantic route to Japan and China, lands he mistakenly believed to be rich

in gold. It is one of the ironies of history that instead he discovered a new world, richer in precious metals than the old.

Gold is incorruptible, a metaphor for purity and eternal life. It seemed logical to the men of the Middle Ages that this purest of metals should abound in, or near, the Earthly Paradise, which scripture placed in the East, where the sun rose.

Four rivers flowed from the Earthly Paradise and one of them was the Nile. Then what easier way to reach the Earthly Paradise than to follow the Nile to its source? Rumors of a great river in sub-Saharan Africa had circulated since antiquity, and it was logical to suppose that this must be the Nile. As the Portuguese explorers moved down the western African coast, they identified each of the great rivers they encountered—the Senegal, the Niger and the Congo—in turn with the Nile, eagerly questioning local people about the lands where each river arose.

These geographical misconceptions were extraordinarily fruitful. Without them, it is doubtful the Portuguese would ever have begun the punishing series of expeditions around Africa that finally led to the sea route to India. The myth of the Earthly Paradise had a powerful political dimension as



A detail from a 1572 engraving of Venice shows the city's famous arsenal with its ship-building assembly line. "In the Venetians' arsenal...boils through wintry months tenacious pitch," wrote Dante. "One [workman] hammers at the prow, one at the poop, this shapeth oars, that other cables twirls, the mizzen one repairs, and mainsail rent."



A map dating from 1447 shows that the true shape and extent of Africa was still unclear to European navigators in the mid-15th century. The larger red area is the Red Sea.

well. It was widely believed in Europe that somewhere near the Earthly Paradise lay the realm of a Christian monarch named Prester John. When the legend first arose in the 12th century, his kingdom was located in Asia, and is so marked on some maps.

Closer acquaintance with Asia, the result of the travels of men like Marco Polo and William of Rubruck, did not put an end to the legend of Prester John. Instead, his realm was displaced to lesser-known lands, first to India, then to Africa. Pilgrims had learned from Ethiopian priests in Jerusalem of the Christian kingdom of Ethiopia, and in 1481 a mission from Ethiopia somehow found its way to Lisbon. Not long afterward the Portuguese King João II dispatched an expedition up the Senegal River, which he identified with the Nile, searching for the land of Prester John. This was not the first such expedition. When the Venetian explorer Ca' da Mosto reached the Cape Verde Islands in 1456, sailing under Portuguese auspices, he had reported that he had heard that the realm of Prester John lay 300 leagues into the African interior. How hearts must have leapt in Lisbon! All that was needed was to make contact with Prester John and his army, and the Islamic world would be outflanked and the Muslim

monopoly of the eastern trade at last broken.

Legend, politics and economics were intimately intertwined. In 1487, the same year Bartolomeu Dias set off on his epoch-making voyage around the Cape, King João sent the Arabic-speaking Pero de Covilhã overland to search for the kingdom of Prester John. He visited Makkah, gathered information on trade in the Indian Ocean, sailed down the East African coast as far south as Sofala and eventually made his way to Ethiopia. He had found the land of Prester John, but, sadly, it was not the Earthly Paradise. This disappointment was palliated by a single fact which he reported back to Portugal by messenger before his 30-year captivity in Ethiopia: It was possible to reach India by sailing

around Africa. He could only have learned a geographical fact of such overwhelming importance from Indian Ocean sailors, probably in Sofala. His report reached the Portuguese court and confirmed Dias's discovery. And incidentally, it showed that the true shape of Africa was known to the Arabs before Vasco da Gama's voyage.

THAT GOLD WOULD ABOUND  
IN THE EARTHLY PARADISE,  
AND THAT THE MYTHICAL  
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HELP THE EUROPEANS  
DISCOVER IT—IF ONLY HE  
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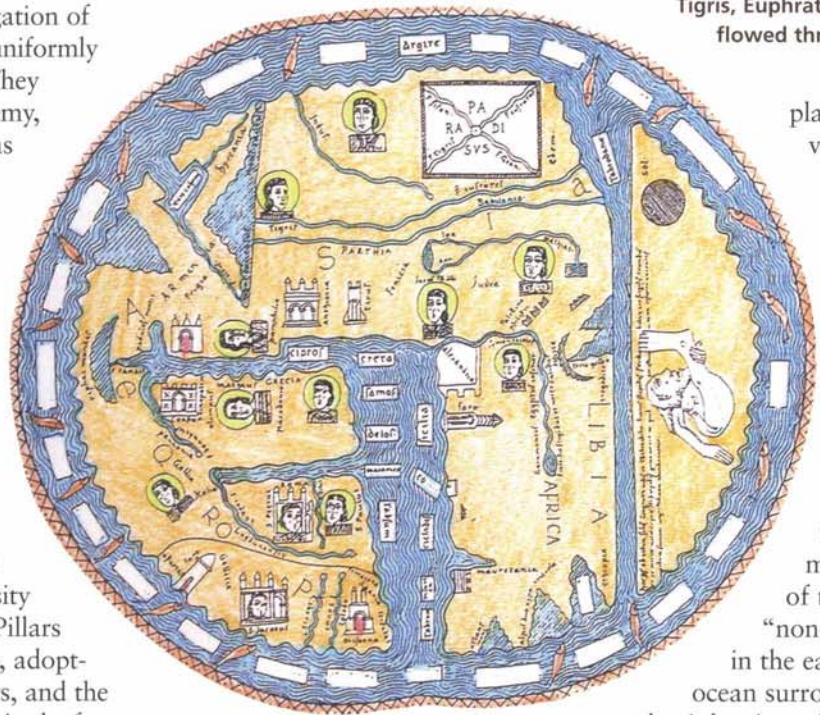


Men had speculated on the true shape and extent of Africa since the days of Herodotus in the fifth century BC, and though Herodotus himself is the source of two accounts of the circumnavigation of Africa, later Greek writers uniformly dismissed both as fantasy. They followed Aristotle and Ptolemy, who believed that Africa was joined to Asia somewhere east of India, making the Indian Ocean a landlocked sea like the Mediterranean. This view, with some modifications, became geographical orthodoxy for medieval scholars in both Europe and the Islamic world.

Toward the end of the 13th century, advances in shipbuilding and navigation nourished Europeans' curiosity about what lay beyond the Pillars of Hercules. The round ship, adopted from Atlantic shipbuilders, and the compass, introduced by the Arabs from China, made Atlantic voyages possible. In 1291, two brothers from Genoa, Ugolino and Vadino Vivaldi, passed through the Pillars of Hercules and voyaged south down the West African coast, "*volentes ire in Levante ad partes Indiarum*" ("desiring to go east, to the regions of India"). It was the first recorded attempt to circumnavigate Africa since antiquity. This single phrase from the chronicle recording their voyage could serve as the motto for the history of European maritime expansion.

The Vivaldi brothers vanished at sea. What is remarkable about their voyage is that they thought they could reach India by sailing around Africa. Why did they think this was possible?

One of the few Muslim scientists to challenge geographical orthodoxy was al-Biruni, who wrote in the later 10th century. This great scientist, in one work, stated quite categorically that no one could sail the sea south of Sofala on Africa's east coast, and that no one foolish enough to try had ever returned. Yet in another work, meditating on a story he had read in al-Mas'udi of the discovery in the Mediterranean of a carved



This early 13th-century "Beatus" map, with south at the top, locates the Earthly Paradise in Southeast Asia. From it flow the four major rivers of the world—often identified as the Nile, Tigris, Euphrates and Ganges—which all flowed through Muslim lands.

plank from an Indian Ocean vessel, al-Biruni concluded that it could only have come there by drifting around Africa—and indeed a sketch map in one of his works clearly shows Africa as a peninsula.

A similar story occurs in the accounts of the Roman geographer Strabo, so both the Arabic and the classical sources contain two diametrically opposed views of the shape of Africa. In the "non-Ptolemaic" tradition, found in the earliest Arab geographers, the ocean surrounded the world, and hence the Atlantic and the Indian Ocean were one and the same body of water. The Ptolemaic tradition had the eastern shore of Africa joined to China.

There was an almost uncrossable divide between the theories of the geographers and the practical experience of the seamen who sailed the Indian Ocean. It only began to be bridged in the 15th century, when the Arab navigator Ahmad ibn Majid codified the experience of a lifetime navigating the Indian Ocean and the lower reaches of the Red Sea in a series of remarkable works.

In one of these, the *Kitab al-Fawa'id fi Usul 'Ilm al-Bahr wa' l-Qawa'id* (*The Book of Useful Information on the Principles and Rules of Navigation*), written about 1490, he describes the possibility of circumnavigating Africa from east to west as if it were common knowledge.

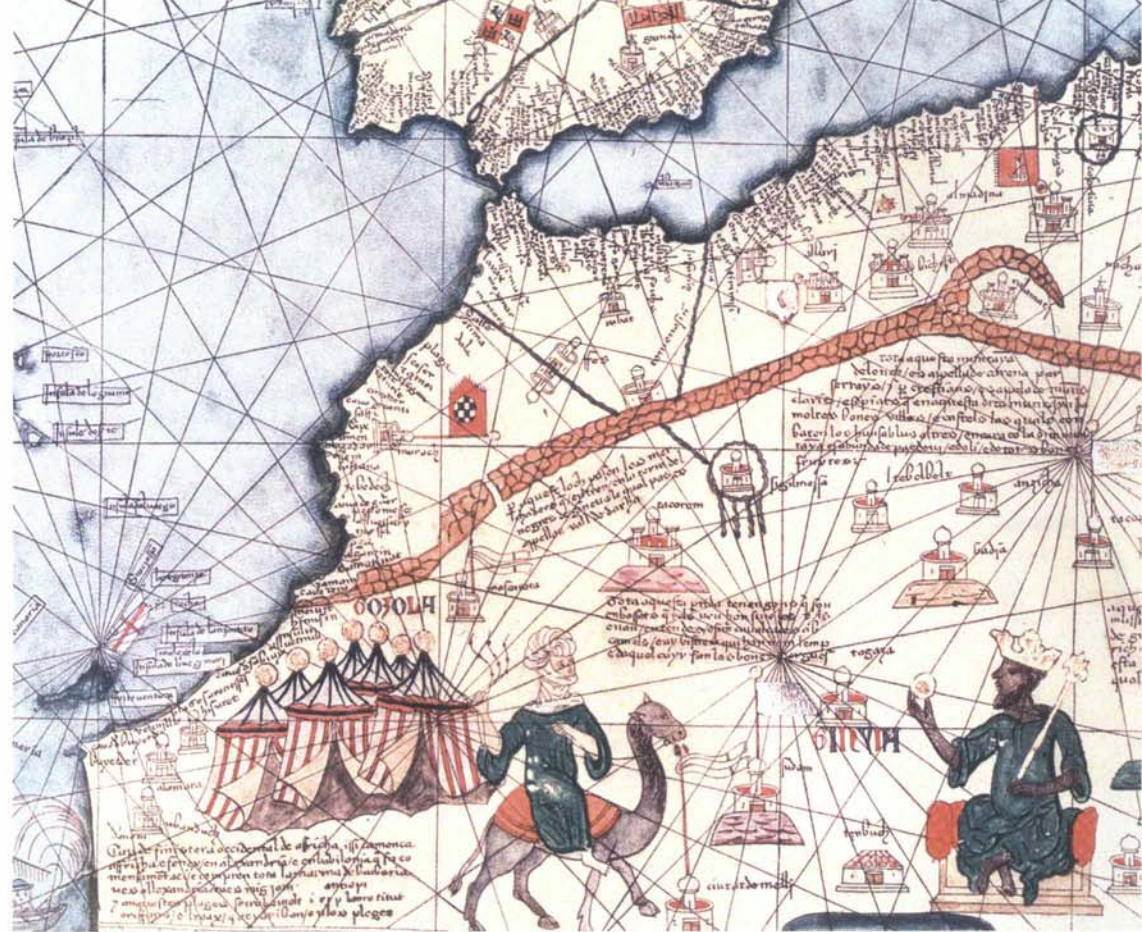
Ibn Majid names the major East African ports from Mogadishu to Sofala and then says, "When you reach Sofala you pass the island of Madagascar on your left, separated from the coast on your right. There the land turns to the northwest, where the regions of darkness begin.... Then you come to the coast of the

Mansa Musa, shown crowned at right, was the ruler of the vast Mandingo kingdom of Mali. From the mines of West Africa he amassed legendary amounts of gold, which his subjects traded for salt, weight for weight. This is a detail from the Catalan Atlas, which was produced in 1375. Note how abruptly the mapmakers' knowledge of the details of the African coast ends.

Maghrib, which begins at Masa.... When you have passed Masa, you come to Safi.... Now you have reached the Moroccan coast. You then enter the Strait of Ceuta, the entrance to the Mediterranean." The route is described in a clockwise direction, showing the writer's Indian Ocean orientation. It is clear that toward the end of the 15th century, outside conventional learned circles, new information about the true shape of Africa was beginning to circulate.

Two far-off events at the beginning of the 15th century had profound repercussions in the Indian Ocean: the Portuguese capture in 1415 of Ceuta, on the Moroccan coast opposite Gibraltar, and the death in 1405 of the Central Asian conqueror Tamerlane (Timur). Ceuta was the port from which the Muslim invasion of Spain had been launched in 711; its capture marked the beginning of the Portuguese push around Africa that culminated in the discovery of the sea route to India.

Azurara, the official chronicler of the capture of Ceuta, painted a glowing picture of the town, which he called "the key to the whole Mediterranean Sea." The city astonished the Portuguese soldiers, who were amazed at its fine houses, the gold, silver and jewels in the markets and the cosmopolitan population. They saw men "from Ethiopia, Alexandria, Syria, Barbary, Assyria...as well as those from the Orient who lived on the other side of the Euphrates River, and from the Indies." Azurara clearly states that one of the motives of the expedition was to seize control of the African gold trade: Forty years later, with the establishment of the fortress of São Jorge da Mina on the Guinea coast, 25 to 35 percent of the gold that had formerly made its way across the Sahara to North African markets and to Mamluk



Egypt now passed into the hands of the Portuguese instead.

In Asia in the late 1300's, the armies of Tamerlane, a descendant of Genghis Khan, swept over Iran, Iraq and Syria. The major cities of the Islamic heartlands were destroyed with great loss of life. To the east, Delhi was sacked in 1398, and China was spared only by Tamerlane's death. The overland Silk Roads from China to the West were disrupted as the cities they had linked were destroyed. Concerned at the disruption of their overland export trade and anxious to explore maritime alternatives, the Chinese in 1402 sent an embassy to the newly founded city of Malacca, in what is today Malaysia, a port that would grow to be the linchpin of trade between the Indian Ocean and the Pacific. In 1405, the year Tamerlane died, the Ming emperor of China dispatched the first of seven great argosies to the Indian Ocean under the admiral Zheng He.

At the same time that the vast Chinese fleets crossed and recrossed the Indian Ocean, Muslim sultanates began to appear in Malaysia, Indonesia and the Philippines. Ahmad ibn Majid composed his navigational works and, in the West, European ships sailed into the Atlantic. The simultaneity of this sudden burst of maritime activity is fascinating. The Orient was reaching out to the Occident at the very time the Occident was "desiring to go east, to the regions of India."

"DESIRING TO GO EAST, TO THE REGIONS OF INDIA," THE GENOESE VIVALDI BROTHERS MADE THE FIRST RECORDED EUROPEAN ATTEMPT TO CIRCUMNAVIGATE AFRICA IN 1291. THEY VANISHED.

#### BARTER AND THE MONETARY FRONTIER

In the west coast of Africa, the coastal settlements of the Portuguese, beginning in 1482 with São Jorge da Mina, traded for gold from the remote interior, where tribes mined it and exchanged it by barter for salt, cloth and trinkets. On the east coast of Africa, the gold was bought in the interior by intermediaries, also through barter, and then brought to the Arab merchants at the port of Sofala. In both places, it was rumored that the tribesmen who dug the gold from the ground were cannibals. The same stories were told throughout the Indonesian archipelago. Barter and reputed cannibalism apparently marked the limits of the Mediterranean-Indian Ocean monetary economy. Even peoples who lay beyond the linguistic and monetary boundaries of the expanding world economy were its silent partners. These frontiers between monetary and non-monetary economies coincided with the shifting boundaries between the known and the unknown, both geographical and cultural.



## The Leek-Green Sea

The Greeks were separated from India by the powerful Persian Empire, and it was via Persia that knowledge of India and southern Arabia first percolated to Greece. Even before the conquests of Alexander, who died in 323 BC, Greeks had served the Persian emperors as mercenaries and officials, and it was from them that Herodotus, writing in the fifth century BC, learned something of what lay to the east.

The first thing Herodotus mentions about India is gold. In a discussion of Darius's revenues from 19 tributary nations, Herodotus says that the largest amount was paid by India: "The Indians, the most populous nation in the known world, paid the largest sum: 360 talents of gold." The fact that it is improbable that the Indians paid Darius any tribute at all does not detract from the significance of the account: It shows that, by the time of Herodotus, India was already regarded as the richest and most populous place in the world—and that it produced gold. The idea of the fabled

"riches of the east," so to obsess Europeans, had already reached its classical formulation some 2500 years ago.

Herodotus tells us exactly how the Indians got the gold to pay tribute to Darius:

*Eastward of India lies a desert of sand.... There is found in this desert a kind of ant of great size—bigger than a fox, though not so big as a dog.... These creatures as they burrow underground throw up the sand in heaps, just as our own ants throw up the earth.... The sand has a rich content of gold, and this is what the Indians are after when they make their expeditions into the desert.... When the Indians reach*



Like the giant gold-digging ants Herodotus described in the fifth century BC or this 16th-century depiction of shipwrecked Portuguese sailors battling giant crabs in the Indian Ocean, the fantastic, the strange and the astonishing have always been ascribed to whatever lands were little-known and distant. For Europeans, this was the East.

*the place where the gold is, they fill the bags they have brought with them with sand and start for home again as fast as they can go; for if the ants—if we can believe the Persians' story—smell them, they at once give chase.*

The association of ants with gold almost certainly stems from the Sanskrit word *pipilika*, "ant gold," which occurs in the Hindu epic the *Mahabharata*. Herodotus's story may well have been generated by this metaphorical Indian term for gold dust. It caught the imagination of a number of classical authors, and the association of giant

ants with gold became a standard *topos* of medieval literature: Whenever India and other eastern lands are mentioned, giant ants are summoned forth. Sir John Mandeville, that engaging liar of the late 14th century, placed giant gold-digging ants on the "Island of Gold" (Sumatra) in the Indian Ocean. Buzurgh ibn Shahriyar, author of the 10th-century *'Aja'ib al-Hind (Wonders of India)*, gives a rationalizing version in which the ants infest the gold-bearing sand, but it is men who mine it, "digging tunnels like ants; out of the tunnels come swarms of ants the size of cats and eat the men and tear them to pieces."

Buzurgh ibn Shahriyar locates his ants not in India, but in "the land of Zanj"—East Africa. Confusion between India and East Africa persisted even after Alexander's expedition to the Indus and the exploration by his admirals of the Arabian coasts. Alexander had found elephants and crocodiles in India; similar animals were found in Africa. Surely this was evidence that the two were somehow connected! Such speculations reached their extreme with the idea that the Ganges flowed into the Nile.

If we can believe Herodotus, the Egyptians discovered the true shape of Africa and the sea route to Europe more than 2000 years before the Portuguese. Pharaoh Necho, who came to the throne in 609 BC, undertook two projects of astonishing originality. He constructed a canal linking the Nile to the Red Sea—a project that claimed the lives of 120,000 workers—to facilitate trade with the incense lands of southern Arabia and the Horn of Africa. The second project may have been motivated by simple curiosity: He hired Phoenicians, the foremost mariners of the ancient world, to circumnavigate Africa. They "set out from the Red Sea and sailed the southern sea; whenever autumn came they would put in and sow the land...and there await the harvest; then, having gathered in the crop, they sailed on, so that after two years had passed, it was in the third that they rounded the Pillars of Hercules and came to Egypt" through the Mediterranean.

There were other voyages of exploration in the sixth and fifth centuries BC. A Latin poem by Avienus, based on a much earlier Greek original, describes a voyage around 550 BC down the West African coast by a sea captain from Marseille.

### THE MARINERS OF SOUTHERN ARABIA

In ancient times, the peoples of South Arabia were the paramount mariners in the Indian Ocean. Their function in the economy of this huge area was in some ways comparable to that of the Phoenicians and Carthaginians in the Mediterranean. But there were also great differences: For one, South Arabia was itself a producer of valuable gums and aromatics, particularly frankincense and myrrh, much sought after for religious purposes by all the empires of the time. South Arabia, in particular Yemen, also had a flourishing agriculture based on sophisticated techniques of water management. This was because Yemen just catches the edge of the monsoon, giving it a higher rainfall than the rest of the Arabian Peninsula and permitting intensive agriculture and the growth of centralized states. Yemen was also a key area in the transmission of food plants between India and Africa. From the middle of the first millennium BC, South Arabians dominated the carrying trade in the western Indian Ocean, a position they held until modern times. This kind of historical continuity is rare and is one of the most astonishing things in the history of the Indian Ocean.

He reached either the Senegal River or the Gambia and identified it with the Nile, just as the Portuguese were to do 2000 years later. To the east, the Persian emperor Darius, who reigned between 521 and 486 BC, explored the Indian Ocean between the Indus River and the Red Sea.

Six years after the death of Darius, the Carthaginians sent a huge expedition down the coast of West Africa. According to the Greek translation of a Punic text said to have been inscribed on a stele in Carthage, an admiral named Hanno set out with 60 galleys and 30,000 colonists. He founded a number of trading stations along the coast—including Agadir, which thrives today—and reached as far south as the mountain

called *Theon Ochema* in Greek, the Chariot of the Gods—probably Mount Kakulima in Guinea.

It is tempting to link these Egyptian, Persian and Carthaginian voyages of exploration, as they all took place between about 580 and 480 BC and most had a Phoenician



The Andaman Islands in the Bay of Bengal were said to be inhabited by wolf-headed people, who were depicted in a "book of wonders" produced in Paris in the early 15th century. Such manuscripts, commissioned by wealthy patrons, presented tales of distant lands for the entertainment of their readers.





Philippus Baldaeus's 17th-century account of Ceylon and the Malabar and Coromandel coasts of India included cultural as well as geographical information. His depictions of episodes from Hindu mythology were almost certainly based on Indian originals. Baldaeus spent the years 1658 to 1665 in Ceylon, and his extensive and factual account contributed to Europeans' understanding that eastern civilizations had literary and iconographic traditions as complex and sophisticated as those of the western world.

connection. The time span of 100 years is comparable to the time it took the Portuguese to find their way around Africa. If we can credit these accounts, do they tell of an "age of discovery" in the sixth century BC?

If there was such an age, it seems to have had no lasting results. Even the authors who recorded these events, principally Herodotus and Strabo, were unknown to Europe until after the European Age of Discovery. The Greek defeat of Darius at Marathon in 490 BC put an end to his conquests in Europe, and the rise of Rome embroiled the Carthaginians in a series of debilitating wars that ended with the Roman destruction of Carthage.

Asian expansion to the West was not to resume for some eight centuries, until the rise of Islam in the seventh century AD.

*It would seem to be a fact that the remotest parts of the world are the richest in minerals and produce the finest specimens of both animal and vegetable life.*

—Herodotus

WAS THERE AN  
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That wonders, like exotic plants and rare minerals, increase with distance also became a *topos* of the western view of the East. The first known book devoted entirely to India is from the late fifth century BC, written by a Greek doctor named Ctesias, who served the Persian king Artaxerxes.

Everything in it is hearsay, filtered through Persian sources. Fact and fancy mingle without distinction. Along with the real elephants, long-tailed monkeys and talking parrots are imaginary giant dogs, a fountain of liquid gold and tigers with human faces. The interior of India is inhabited by pygmies who hunt with birds, according to Ctesias. The mountains abound with silver and gold, guarded by griffins, four-legged birds the size of wolves. Everything in the East is bigger and better, a point also stressed by Herodotus: The sheep and goats are bigger than donkeys and the dates are three times the size of those of Babylonia. There is a magical fountain whose waters make men tell the truth—very useful to the king! Indians never have toothaches or headaches. They live to the age of 200.

Dog-headed men live in the mountains; they cannot speak, but only howl. Nonetheless they have dugout canoes and trade in a purple dye better than any found in Greece.

It is only with Alexander the Great that we reach firmer, more factual, ground. His conquest of the Persian Empire brought the Greeks in 326 BC to the banks of the Indus River, at the northwestern edge of India. This expedition provided a great deal of firsthand information about the peoples, government, customs, plants and animals of India. Alexander sent his admirals to explore the coasts of both the Gulf and the Red Sea, and himself voyaged a symbolic 500 *stadia* into the Indian Ocean. Rumors of countries located east of India and in the Indian Ocean began to reach the West.

The sources for Alexander's expeditions are all late, contemporary accounts having perished. Fortunately, the geographer Strabo, who published his great compilation in 7 BC, preserved some earlier information. He is in general skeptical of the accounts of India: "All who have written about India have proved themselves, for the most part, fabricators, but preeminently so Deimachus; the next in order is Megasthenes; and then Onesicritus and Nearchus, and other such writers who begin to speak the truth, but with faltering voice."

Megasthenes and Deimachus had both spent time in India. Megasthenes gives a fascinating description, partially preserved by Strabo, of the Mauryan court of Chandragupta in Pataliputra around 302 BC. He describes the caste system, customs such as suttee, the form of government and the flourishing state of trade, the wealthy markets and skilled artisans. What Strabo objected to was not this, but that Megasthenes also described the *Enotokoitas*, the men who sleep wrapped snugly in their ears; the *Monophthalmous*, men with one eye in the center of their forehead; the *Opisdodaktulous*, men with fingers that turn backwards; the lively descriptions of battles between cranes and pygmies; and the inevitable gold-mining ants. These wonders captured the popular imagination of Europe up through the Middle Ages; they can be found cavorting among the grotesques on the facades of Gothic cathedrals and in the margins of illuminated manuscripts.

Strabo describes India as "the greatest of all nations and the happiest in lot." The Greek word for "happy" or "fortunate" is *eudaimon*, and it was applied both to India and to southern

Arabia: *Eudaimon Arabia* to the Greeks and *Arabia Felix* to the Romans. The idea that lands to the east, where the sun rose, were happy and prosperous utopias was a third persistent *topos* that fired the European imagination. Somewhere toward the rising sun lay enchanted lands filled with fragrant spices, precious gems, exotic plants and animals. Because Megasthenes and others had also presented idealized portraits of rulers like Chandragupta and their kingdoms, it became a commonplace that to the east dwelled peoples with a natural sense of justice, ruled by wise laws.

It is thus no accident that the Greek writer Euhemerus located his imaginary utopia on the island of Socotra, off the coast of "Happy Arabia" in the waters of the Indian Ocean. It was on another island that Ibn Nafis, writing in the 13th century, placed his natural philosopher who deduced the principles of Islam from the observation of natural phenomena. The 16th-century Italian philosopher Tommaso Campanella located his *City of the Sun* on an island in the Indian Ocean, as did Sir Thomas More his *Utopia*.

It is not until Roman times that we begin to get a clearer picture of eastern lands. This is largely thanks to a Greek work written around AD 70 and called *The Periplus of Erythraean Sea*. This precious little document, almost certainly written by an Egyptian trader from Alexandria, is entirely devoid of fantasy. It lists all the ports of the Red Sea, on both the African and Arabian coasts, their

exports and imports, and some details of their political and ethnic makeup. It gives information about the incense trade with South Arabia and describes the thriving commerce between Egypt, East Africa and the major ports of the western coast of India, the most important of which was Barygaza—today's Bharuch.

Greek trade with the peoples of the Red Sea coast and eventually with India began under the Ptolemies, the dynasty that derived its name and foundation from one of Alexander's generals, who took power in 320 BC. His successor, Ptolemy II, extended his authority to the Red Sea for two reasons: to control maritime trade and to obtain war elephants from the African interior. (A by-product of the hunt for elephants was ivory, extremely valuable and much sought after in Mediterranean markets.) Ptolemy needed elephants—the tanks of ancient warfare—to oppose those of his rivals, the

#### TAPROBANE AND SERENDIPITY

Strabo, who lived from 63 BC to AD 24, mentions the island of Sri Lanka under the name Taprobane, from the Sanskrit *Tamraparni*. He says it lies on the same parallel as the Horn of Africa and that it exports large quantities of ivory and tortoiseshell to India—but he does not mention cinnamon, which did not begin to be cultivated in Sri Lanka until much later. Strabo magnifies the size of the island by a factor of 14, an error that would not be corrected until the European voyages of the 16th century. Greek merchants from Egypt traded with the island in Strabo's time, and numbers of Roman coins dating from the third century of our era have been found on the island. An embassy from one of the rulers of Taprobane even visited Rome. Between the third and sixth centuries, Sri Lanka became one of the major trading destinations in the Indian Ocean, particularly for merchants from Persia and the Ethiopian kingdom of Axum. Sri Lankan pearls, ivory and gemstones were famous and continued to be much sought after in Islamic times, when the island was known as Sarandib—the name from which Horace Walpole, writing in the 18th century, coined the word "serendipity."



Seleucids, whose rule over much of what is now Iran, Iraq and Syria gave them control of the overland and Arabian Gulf routes to India and thus a constant supply of elephants.

The first shipment of East African elephants reached Egypt in the 260's BC; its arrival was commemorated by an inscription on a stone stele. The trade and the hunts led to both the reopening of the silted-up canal of Necho and the founding of a chain of hunting stations and trading ports along the African coast of the Red Sea: Myos Hormos, Philotera, Berenike, Trogydica and finally Ptolomeis of the Hunts, 80 kilometers (50 mi) south of Port Sudan, not far from Suakin. As the hunts reduced elephant populations, the expeditions were forced to venture farther and farther south.

Myos Hormos, "Mussel Harbor," was the major Red Sea port during Ptolemaic times. Its site has now been identified with al-Qusayr, on the Red Sea coast of Egypt. Strabo says it was visited by an average of 120 ships a year on the India run. Berenike was linked by road with Coptos on the Nile, just north of the gold mines of Wadi al-'Allaqi. At Berenike, archeologists have discovered fragments of documents in 12 different languages, including Tamil and Prakrit, evidence that this Red Sea port was in touch with both southern and northern India.

Ptolemy II's drive down the African coast and into the Red Sea led his navigators to the western edge of the monsoon system, and it was only a matter of time before the Greeks discovered its secrets, long known to Arab and Indian sailors.

*The Periplus of the Erythraean Sea* attributes this discovery to a merchant named Hippalos and gives the date as 125 BC, but there are Greek references to the monsoon system before Hippalos. The Greek practice of ascribing "firsts" to named individuals—a habit they bequeathed to

## THE QUESTION OF MADAGASCAR

Malagasy is the language of Madagascar, the large island just off the east coast of southern Africa. It is an Austronesian language most closely related to the one spoken by the Ma'anyan people along the Barito River in South Borneo. Who brought that language more than 7000 kilometers (4500 mi) across the Indian Ocean? And when?

Madagascar also shares such Indonesian cultural traits as outrigger canoes, blowpipes, wet and dry rice cultivation, houses built on stilts and the use of domesticated cattle for

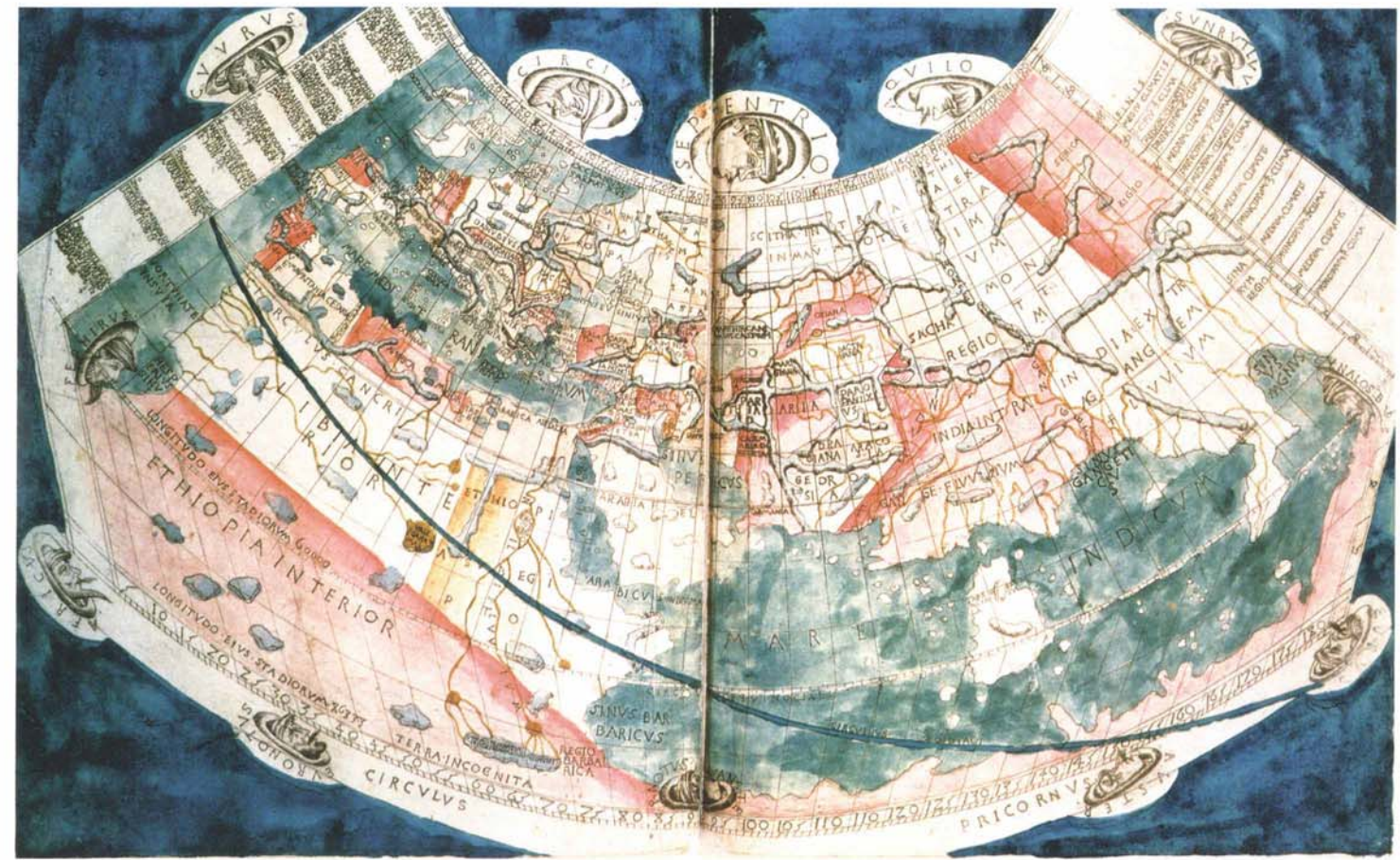
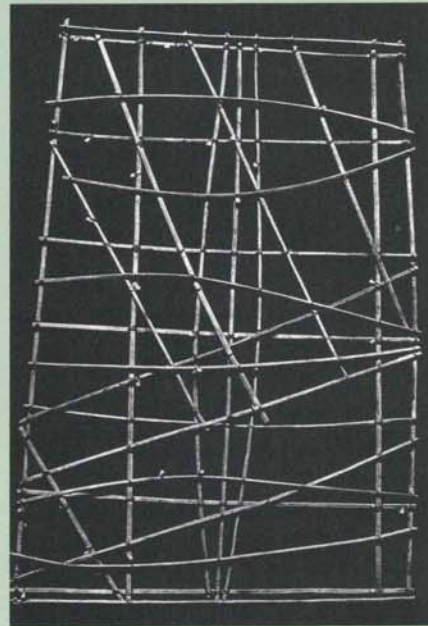
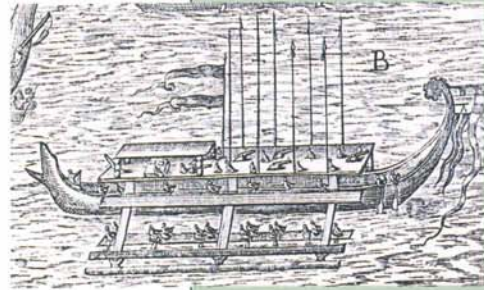
plowing. It is generally agreed that the island was settled by migrants who came by sea from somewhere in the Indonesian archipelago. J. Innes Miller, in his classic work on the Roman spice trade, thought Madagascar must have been settled as early as the second millennium BC, and he theorized that the cinnamon of the classical world was brought to markets in the Horn of Africa and Arabia through Madagascar from India and even China. This exciting theory, which neatly explains both the presence of

an Austronesian language in Madagascar and cinnamon in the Red Sea markets, is almost certainly wrong.

The earliest archeological evidence for the presence of people of Indonesian origin in Madagascar dates from the fourth century after Christ. This would mean that, well into historical times, a major sea migration between island Southeast Asia and Africa occurred. There are echoes of such a migration in Arabic sources. Ibn Shahriyar's *Wonders of India* mentions an attack on the East African coast by merchants and traders from the mysterious island of Waqwaq (see page 22) in 945. Al-Idrisi, writing in 1154, mentions that, in earlier times, direct voyages had been made between Madagascar and parts of Indonesia and Malaysia. In 1229, Ibn al-Mujawir mentions an attack on Aden itself by men in outriggers from Madagascar.

The settling of Madagascar by people from the Indonesian archipelago is remarkable; it should be borne in mind, however, that the Polynesians, also speaking Austronesian tongues, were at the same time engaged in their epic voyages east into the deep Pacific, voyages that ended with the settlement of Hawaii around AD 400. The "discovery" of Madagascar, like the "discovery" of the Pacific islands, went unchronicled, yet both rank as extraordinary human achievements.

Left: A large outrigger *prahu*, an Indonesian craft of a type that may have been used to cross the southern Indian Ocean to Madagascar. Right: A Micronesian *rebbelib* stick chart used to teach and record patterns of ocean swells for use in open-ocean navigation; the shells indicate islands.



Upper: A map of the world based on a description by Claudius Ptolemaeus of Alexandria (Ptolemy), who lived in the early second century of our era. The Arabian Peninsula and the Red Sea lie just left of center. Note how the east coast of Africa curves eastward to connect, at far right, with China, thus making the Indian Ocean an enclosed sea. Lower: The map of al-Idrisi dates from 1154, and is oriented with south at the top. Note how the east coast of Africa in this map also turns east but does not connect with China; rather, it opens into the "All-Encompassing Ocean." Thus in the Ptolemaic view, circumnavigation of Africa is impossible, while in al-Idrisi's view it is technically possible, though too daunting to undertake.

UPPER: CAMBRIDGE UNIVERSITY LIBRARY (BRY, INDIA ORIENTALIS, IV, 1601); LOWER: BRITISH MUSEUM

UPPER: BRITISH LIBRARY / BRIDGEMAN ART LIBRARY; LOWER: BODLEIAN LIBRARY



Muslim authors—must therefore not be taken too seriously. Nevertheless, Hippalos may have inaugurated actual sailing with the monsoon, thereby making regular trade with India economically viable and for the first time linking the Mediterranean trading world to the Indian Ocean. By the first century of our era, Greek and Roman merchants were trading with India as a matter of course, as confirmed by finds of Roman coins and pottery at Indian sites.

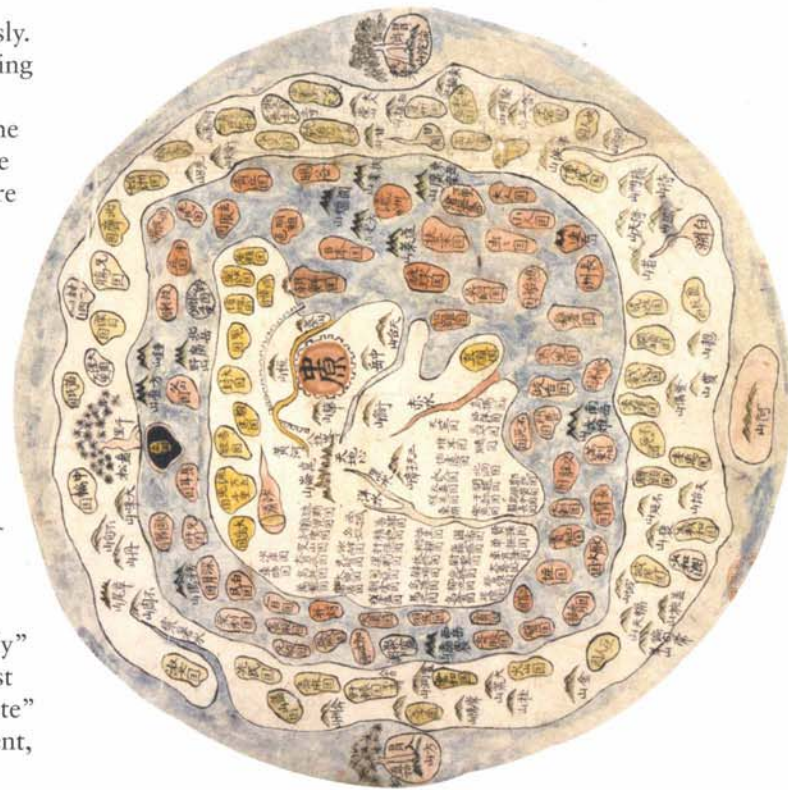
By that time, too, trade with southern Arabia, India and China—the three key exporters in a complex network—appeared as a growing threat to the Roman economy. The gold and silver of the empire was draining to the east to pay for unnecessary luxuries. “And by the lowest reckoning India, China and the Arabian Peninsula take from our empire 100 million *sesterces* every year—that is the sum which our luxuries and our women cost us,” wrote Pliny in a famous passage. He returns again and again to the theme. It became a commonplace in the literature of the time to

contrast the “manly” austerity of the past with the “effeminate” luxury of the present, to view Rome as emasculated by spices, aromatics, perfumes, Indian muslins and Chinese silk. In fact, 100 million *sesterces* was not a particularly large

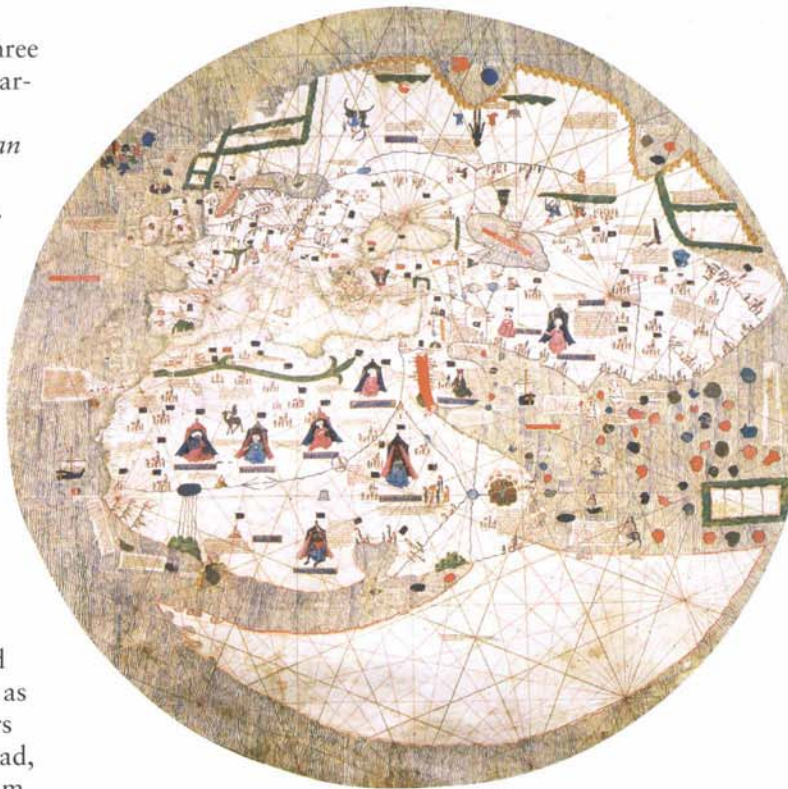
sum: Pliny’s nephew, Pliny the Younger, left more than three million *sesterces* in his will, and he was not considered particularly wealthy.

The picture we get from *The Periplus of the Erythraean Sea* is quite different. The trade was more complex than the simple exchange of precious metals for luxury goods. The cloth factories of Arsinoë in Egypt were manufacturing textiles aimed at specific markets, such as the kingdom of the Greek-speaking ruler Zoskales on the African coast near present-day Massawa. Zoskales imported Arsinoë robes in exchange for ivory, tortoiseshell and rhinoceros horn. Merchants from Egypt also brought him glassware, copper alloy, iron, tools, swords, bronze drinking cups and even Italian wine, shipped in amphorae. The same ruler also imported textiles, iron and steel from India. Almost no money changed hands, only a little being imported “for the use of foreigners.”

It was different in India. At Barygaza, on the Gulf of Cambay, gold and silver coins were in demand and could be exchanged advantageously for the local currency, just as they could be in Portuguese times and later. Greek traders sold or exchanged Italian and Greek wine, copper, tin, lead, coral, cloth, glass, storax and antimony for ivory, bdellium



A Korean world map, above, of a type whose religious and cosmological content goes back to mid-fourth-century China, is centered on the legendary Mount Meru in Central Asia. The mid-15th-century Catalan map below is similarly centered on Jerusalem, but includes reasonably accurate information on the African coast and interior as far south as knowledge of the period reached. Southward of that, the cartographer did his best to harmonize scanty fact and plausible geographical theory.



UPPER: BRITISH LIBRARY (MAPS C.27 F.14); LOWER: BIBLIOTHECA ESTENSE / SCALA / ART RESOURCE

## CINNAMON COUNTRY

By the time of Strabo, there was another constant in classical descriptions of the Indian Ocean world: a cinnamon-producing country in East Africa. Ptolemy and *The Periplus of the Erythraean Sea* also speak of cinnamon and its close relation, cassia, being obtained from this area, which corresponds to modern Somalia and Eritrea. Strabo says both spices grew in the marshes formed by the Nile in what is now Sudan, where they were guarded by vicious giant bats.

Cinnamon and cassia come from trees of the same family. In antiquity cinnamon grew wild in India, while cassia came from a tree that grows in Southeast Asia. Today the cinnamon gardens of Sri Lanka are the main suppliers of that spice; almost all of what is sold in the United States as “cinnamon” is in fact cassia, which is preferred there for its stronger flavor. Sri Lanka did not begin to export cinnamon until the later Middle Ages.

Modern botanists are unanimous in agreeing that cinnamon and cassia have never grown anywhere in Africa. The classical sources are just as unanimous that they did. An exception is Pliny, who in a famous passage of his *Natural History* says that cinnamon and cassia were brought to Ethiopia by brave men, sailing “over vast seas on rafts.” They docked at the port of Ocelos on the Tihamah coast of Arabia, he says, where they exchanged the cinnamon for “articles of glass and copper, clothing and buckles, bracelets and necklaces.” The round-trip voyage took five years, and many perished along the way.

Elsewhere in his *Natural History*, Pliny gives a long description of the cinnamon plant and the rituals connected with the collection of the spice, but he describes it as a low bush with a dried-up appearance and a leaf like wild marjoram, rather than the tall, slim verdant tree we know. This raises an obvious question: Was the “cinnamon” traded from the ports of the Horn of Africa in the first century after Christ the same as the cinnamon we use today? Or did the word “cinnamon” refer to something else entirely?

In Arabic, the word for cinnamon is *qirfab*, which simply means “bark,” while cassia is called *darjin*, a loan word from Persian meaning “wood of China.” The Arabs obtained both from Indian ports, not from East Africa. It seems possible that classical “cinnamon” and “cassia” were names for aromatic resins and not the spices we know by those names today. Then there are those mysterious men on rafts and their outrageous five-year voyages—for no historical traders have ever made regular voyages of that duration. Supposing Pliny’s text is corrupt and the voyages actually lasted one year, then perhaps true “cinnamon” was occasionally brought to the Arabian coast by Indonesian traders in their characteristic outriggers, which might well have looked to the Greeks like rafts. Perhaps, even, these traders were the same mysterious people as those who colonized Madagascar.

An illustration and description of a *Cinnamomum* tree in a 10th-century Arabic manuscript of Dioscorides’ *De Materia Medica*. Dioscorides wrote that cinnamon was useful in combating a number of illnesses, from coughs to kidney diseases.



gum, onyx, myrrh, woven and unwoven silk, “mallow cloth” and pepper.

Barygaza was linked by overland trade routes to China, which only began to emerge from fable about the time of the *Periplus*, the last chapters of which deal with this remote economic

power: “Beyond [India], now under the very north, ...there lies a very great inland city called Thina, from which raw silk and silk yarn and [Chinese] cloth are brought overland to Barygaza through the Bactrians.... This Thina is not easy to reach. People seldom come from it, and not many go there....”

So Greek knowledge of the East in the first century ended at India and Ceylon, only rumor lying beyond. In the same century the Alexandrian geographer Ptolemy scattered 22,000 islands—

surprisingly close to the true number—in *Prasodes Thalassa*, or “the Leek-Green Sea,” as he called the Indian Ocean. He told of the Golden Khersonese (Sumatra) and the Isle of Silver and placed the mysterious cities of Cattigara and Thina on the eastern rim of the world.

It would be left to the Arabs of Muslim times to explore this vast region of ocean, with its archipelagos reaching into the Pacific, to open the direct sea route to the port cities of southern China and to establish themselves as the intermediaries in the maritime trade between the Far East and the West. 🌐



# The Seas of Sindbad

I went down to Basra with a group of merchants and companions, and we set sail in a ship upon the sea, and at first I was seasick because of the waves and the motion of the vessel, but soon I came to myself and we went about among the islands, buying and selling.”  
 —The Tale of Sindbad the Sailor, from The 1001 Nights

Besides sailing across the Indian Ocean, there was another sea route from Arabia to India, the oldest of them all. It was not dependent on the monsoon and could be sailed without knowledge of the stars. The Arabian Gulf was the natural corridor between Mesopotamia and India, and the voyage could be made in small boats simply by hugging the coast, always keeping land in sight. Maritime contacts between Mesopotamia and India through Gulf waters go back to the

very beginnings of urban civilization in the third millennium BC, when Sumer on the Tigris and Euphrates Rivers was in touch with Harappa on the Indus.

Unlike the Red Sea, whose reef-filled waters and complex wind regime required skilled pilotage, the Arabian Gulf was relatively easy to navigate. While the shores of the Red Sea were sparsely inhabited and almost waterless, the headwaters and eastern shore of the Gulf were home to ancient

civilizations. Along its coasts have been found the scattered evidence of some five millennia of trade: fragments of pre-Sumerian al-‘Ubaid pottery from the third millennium BC, Chinese celadon and early Islamic glazed jars, Indian bangles, Gujarati carnelian beads, 19th-century coffee cups, Roman coins and the occasional Chinese cash.

On the western shore, in the second century BC, at around the time that Hippalos discovered the secret of the monsoon, the caravan city of Gerrha flourished in what is now the Eastern Province of Saudi Arabia. Strabo, quoting a source named Artemidorus, says: “From their trafficking both the Sabaeans and the Gerrhaeans have become richest of all; and they have a vast equipment of both gold and silver articles, such as couches and tripods and bowls, together with drinking vessels and very costly houses; for doors and walls and ceilings are variegated with ivory and gold and silver set with precious stones.”

Although no certain traces of Gerrha have yet been found, it has been identified tentatively with the site known as Thaj, while its name may be preserved in that of the little port of al-‘Uqair not far away.

At the head of the Gulf was the port the Greeks called Apologos and the Arabs called al-Ubulla; it was conquered in the year 636 by ‘Utba ibn Ghazwan, who, in a letter to the Caliph ‘Umar informing him of his victory, called it “the port of Bahrain, Oman and China.” We see that in the five hundred or so years since the composition of the *Periplus*, a significant change had taken place: The sea route to China, a country known to the classical world only by hearsay, had been discovered.

Basra, a military camp near al-Ubulla in 638, quickly grew into the largest and most ebullient city in the Islamic world, its population exploding from zero to 200,000 in three decades. The streets were thronged with Arabs, East Africans, Persians, Indians and Malay-speakers from “Zabaj” (Indonesia). A clearinghouse for information, it was here that practical knowledge of Southeast Asia and China began to reach the Arabic-speaking peoples and gradually find its way into both sober works of geography and entertaining wonder books. Basra’s most famous writer, the ninth-century polymath al-Jahiz, reflected the excitement of the city’s intellectual world: “Our sea is worth all the others put together,” he wrote, “for there is no other into which God has poured so many blessings. It flows into the Indian



The city of Cambay was an important Indian manufacturing and trading center noted by Marco Polo and illustrated here in the 15th century.

Ocean, which extends for an unknown distance.”

During the half millennium between the *Periplus* and the founding of Basra, most of the references to trade with the Far East emanate from Nestorian Christian sources. Persecuted in

Byzantine lands for their unorthodox beliefs, the Nestorians took refuge in Sasanian Persia, where the Sasanians, inveterate enemies of the Byzantines, welcomed them. The Nestorians were active proselytizers, and, like other marginalized minorities in largely agrarian Asian states, they turned to trade. They followed the overland Silk Roads from Persia into Central Asia

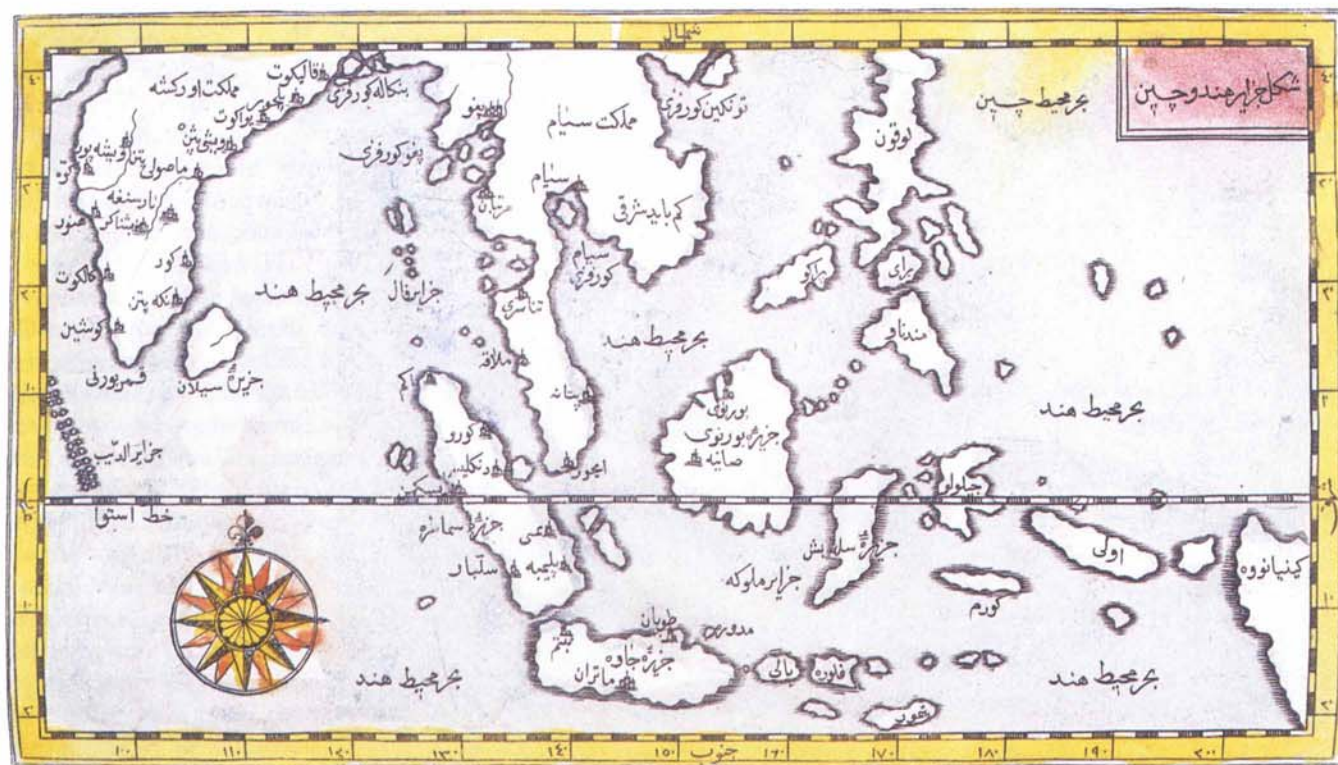
and ultimately to China. Nestorian communities were established on the west coast of India—where they were encountered by the Portuguese a millennium later—as well as in Sri Lanka, Socotra and Yemen.

To the southwest of the Arabian Peninsula, across the Red Sea, lay the Ethiopian Christian kingdom of Aksum, with its port of Adulis. Aksum exported gems, spices—including cassia—incense and gold to Byzantium, India, Sri Lanka and Persia. The gold came from the African interior and the incense was grown in Aksumite territory, but the cassia and other spices almost certainly came from India and what is now the Indonesian archipelago.

The Ethiopic liturgical language, Ge‘ez, was derived from one of the non-Arabic Semitic languages of South Arabia. Its alphabet is the only Semitic alphabet to indicate vowels, and the system by which it does this is elsewhere found only in the various writing systems of India—further evidence of the extent to which ideas as well as spices were trafficked across the Indian Ocean.

Between 540 and 570, two events occurred that had profound effects on Arabian society. The great dam of Ma‘rib in Yemen, which had supported the South Arabian agrarian kingdoms of Saba and Himyar, burst, either through neglect or because of some unrecorded natural disaster. The huge area it had irrigated was laid waste. The fall of these South Arabian kingdoms was to Arab tradition what the fall of Rome was to the early Christians: the end of an old era and the beginning of a new one.

The other important event was the Sasanian Persian invasion of Yemen, which was at that time ruled by Ethiopia. At the request of Sayf ibn Dhi Yazan, scion (cont. on page 23)



This map of the Indian Ocean and the China Sea was engraved in 1728 by the Hungarian-born Ottoman cartographer and publisher Ibrahim Müteferrika; it is one of a series that illustrated Kâtib Çelebi’s *Cihannuma* (*Universal Geography*), the first printed book of maps and drawings to appear in the Islamic world.



## Looking for Waqwaq

In a passage about the sea route to China in his *Kitab al-Masalik wa 'l-Mamalik* (Book of Roads and Kingdoms), Ibn Khurradadhbih gives an estimate of the size of the Indian Ocean: "The length of this sea, from Qulzum [at the head of the Red Sea] to Waqwaq, is 4500 farsakhs." He also states that the distance from Qulzum to the Mediterranean port of Farama is 25 farsakhs. The latter distance, he writes, corresponds to the length of one degree on the meridian; thus, the 4500-farsakh distance to Waqwaq corresponds to 180 degrees. Therefore Waqwaq lies exactly halfway around the world from Qulzum. With its outlandish name and incredible distance eastward, Waqwaq seems to belong to legend rather than commercial geography.

Yet Ibn Khurradadhbih clearly thought Waqwaq was a real place. He mentions it twice more: "East of China are the lands of Waqwaq, which are so rich in gold that the inhabitants make the chains for their dogs and the collars for their monkeys of this metal. They manufacture tunics woven with gold. Excellent ebony wood is found there." And again: "Gold and ebony are exported from Waqwaq."

So where was Waqwaq? Ibn Khurradadhbih's first European editor, the Dutch scholar Michael Jan de Goeje, noted that one of the Chinese names for Japan was *wo-kuo*, "the country of Wo." In the Cantonese dialect, which Arab merchants would have heard, this is pronounced *wo-kwok*. The mystery was solved: "Waqwaq" was an almost perfect rendering of a Chinese name for Japan.

This solution was doubly satisfying, for it solved the mystery of Waqwaq and proved, for the first time, that the Arabs knew of Japan. The trouble with de Goeje's identification, however, is that nothing Ibn Khurradadhbih says about Waqwaq seems to have anything to do with Japan. Although "tunics woven with gold" are barely possible, it is difficult to imagine monkeys and dogs with golden collars in the sophisticated, austere society of ninth-century Japan. Nor does Japan export ebony.

"Waqwaq" was also the name of an unusual tree. The earliest reference to it (though without the name) occurs in a Chinese source, the *T'ung-tien* of Ta Huan, written before 801. Ta Huan was told the story by his father, who had lived in Baghdad for 11 years as a prisoner of war after the Battle of Talas. He claimed to have heard the following story from Arab sailors:

*The king of the Arabs had dispatched men who boarded a ship, taking with them their clothes and food, and went to sea. They sailed for eight years without coming to the far shore of the ocean. In the middle of the sea, they saw a square rock; on this rock was a tree with red branches and green leaves. On the tree had grown a number of little children; they were six or seven thumbs in length. When they saw the men, they did not speak, but they could all laugh and move. Their hands, feet and heads were fixed to the branches of the trees.*

The same story occurs repeatedly in Arabic sources, where the tree is identified as "the waqwaq tree," and is later embellished by turning the little children into beautiful young women, suspended from the branches by their hair. The classic account, written in 12th-century al-Andalus, says the women "are more beautiful than words can describe, but are without life or soul.... This is a wonder of the land of China. The island is at the end of the inhabited world...."

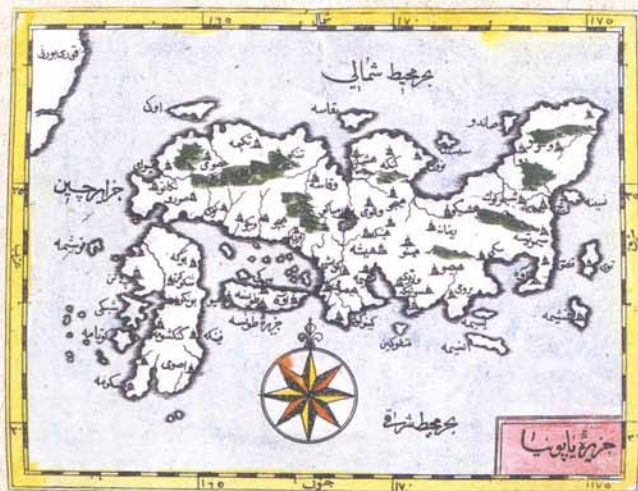
Two accounts, however, do not fit with the others. One describes a fairly advanced culture: "I have

been told by some people that they met a man who had traveled to Waqwaq and traded there. He described the large size of their towns and their islands. I do not mean by this their area, but the size of their population. They look like Turks. They are very industrious in their arts and everywhere in their country they try to improve their ability."

The other is much more intriguing:

*In the year 945 the people of Waqwaq sailed with 1000 ships to attack Qanbaluh [on the coast of East Africa,*

STORIES OF A LAND  
WHERE PEOPLE GREW  
ON TREES LIKE FRUIT  
ENDURED UNTIL THE  
LATE 17TH CENTURY.



Was "Waqwaq" Japan? Ibn Khurradadhbih mentions it as lying "east of China," but nothing else in his description seems to apply to Japan, and no other early Muslim geographer mentions the country. By Mūteferrika's time, however, Japan was well enough known for a tolerable depiction of it to appear in the *Cihannuma*.

*opposite Zanzibar].... When asked why they attacked them, rather than some other city, they answered that it had things needed in their own country and also in China, such as ivory, tortoiseshell, panther skins and ambergris; besides, they wanted to capture men of Zanj, who are strong and able to stand hard labor. They said their voyage lasted a year.... If these men were telling the truth when they said they had sailed for a year, then Ibn Lakis was right when he says the islands of Waqwaq are opposite China.*

De Goeje, who knew this text and was still convinced that Waqwaq was Japan, tried without success to find historical evidence of a Japanese naval assault on East Africa in 945. The French scholar Gabriel Ferrand, who first identified Waqwaq with Madagascar, then with Sumatra, wondered with more reason if this were not an account of an Indonesian attack on Madagascar and the East African coast, or even a memory of the aggressive migration of speakers of Austronesian languages from the Indonesian archipelago to Madagascar. (See page 16, "The Question of Madagascar.")

Al-Biruni, who wrote his wonderful book *Kitab al-Hind* (The Book of India) in AD 1000 based largely on Sanskrit sources, mentions a country where people are born from trees and hang suspended from the branches by their navels. Perhaps the waqwaq tree too goes back to a Sanskrit source, and the Arab tales of Waqwaq are themselves a faint memory of a time when the Indonesian archipelago was in the cultural orbit of Hindu-Buddhist culture.

The story of the waqwaq tree traveled westward, like many other oriental stories, appearing in at least one of the surviving manuscripts of the 14th-century traveler Friar Odoric and in one of the many medieval French romances of Alexander the Great. Its final appearance dates from 1685, when all the mysteries of the Indian Ocean had long faded in the light of pragmatic European accounts. It occurs in the *Safinat Sulayman* (The Ship of Solomon), an account of a Persian embassy to Siam (now Thailand) written by a scribe who accompanied the mission. He says he heard it from a Dutch captain:

*Once on our way to China we dropped anchor in the bay of an island to avoid a heavy storm. There was a strange collection of people inhabiting the island who only barely resembled human beings. Their feet were three cubits long and just as wide and they were completely nude and had very long hair. At night they all climbed to the top of their own trees in the jungle, even the women, who bore their children with them under their arms. Once up in the tree they would tie their hair to a branch and hang there all night resting.*

Nothing shows the medley of cultures of the Indian Ocean so well as the story of the waqwaq tree: It probably originated in a Sanskrit Hindu text, was told in the eighth century to a Chinese envoy by an Arab sailor, was brought to Europe by a Franciscan friar and was retold by a Dutch sea captain to a Persian envoy to the king of Siam. ●

(cont. from page 21) of an old Yemeni aristocratic house, the Sasanian fleet landed at Aden and the Ethiopians were exterminated. The fabulous palace of Ghumdan at San'a, with its ceilings of translucent alabaster so thin that the shapes of flying birds could be discerned through it, was destroyed. The historic connection between the African and Arabian shores of the Red Sea was severed, and the wealth of Aksum was no more. The port of Adulis vanished. The Christians of Ethiopia withdrew to the highlands, where they preserved their distinctive culture in isolation, inadvertently giving rise to the legend of the kingdom of Prester John.

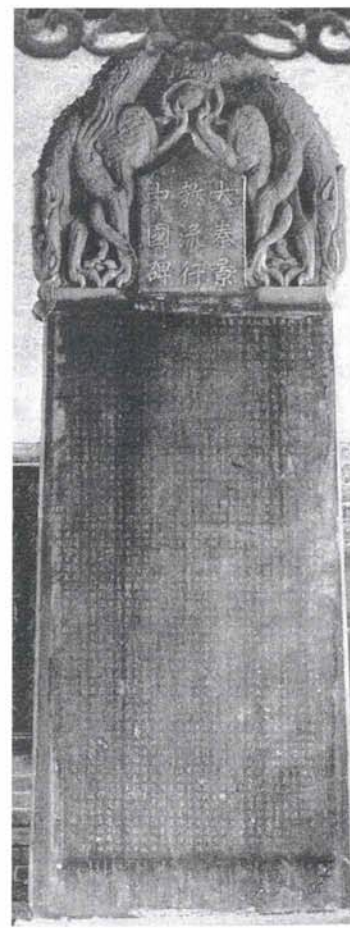
Shortly after the death of the Prophet in 632, the Islamic conquests put an end to the Sasanian dynasty. In the year 711, Muslim armies invaded both Spain in the far West and the province of Sind, roughly corresponding to modern Pakistan, in the East. In 751 the Muslims defeated a Chinese army at Talas, north of the Oxus River, in what is now Kyrgyzstan. The Byzantine Empire, too, suffered: It lost its provinces in Syria, Egypt and North Africa to the Muslims.

Byzantium, India and China were suddenly neighbors of a new world empire, with a new religion—Islam—and a unifying language—Arabic. Persia, the historic enemy of Greece and Rome, was reduced to a province of an Arab empire.

In pre-Islamic times, Sasanian Persia had blocked direct contact between China and the Byzantine empires. Chinese silks and ceramics had reached the West overland almost exclusively through Persia. Exactly when maritime trade with China began is unknown. A Chinese work called the *Chhien Han Shu* mentions trade with the

"South Seas" in the first century BC and speaks of voyages lasting a year. Whether these voyages terminated in India or crossed the Indian Ocean to the Arabian Gulf or Red Sea is unknown, but there is little doubt that Chinese ships at this time reached Malaya, the traditional halfway house between what was in pre-Islamic times the Chinese-dominated Pacific and the Indian-dominated Indian Ocean.

That there were Arab and Persian merchants domiciled in Chinese ports in the immediately



This stele, erected in 781 in Xi'an, includes a list of 70 Nestorians who, with Arabs and Persians, were active traders in China during Umayyad and Abbasid times.





pre-Islamic period is indicated by the words used to refer to them in Chinese annals. Persians were called *Po-ssu*, Arabs *Ta-shih*. *Po-ssu* is obviously an attempt to render the word *Pars*, which gave rise to the Greek *Perses*, the Latin *Parthia* and the Arabic *Fars*. *Ta-shih* is derived from the Aramaic name of the Arab tribe of Tayy, which must have reached China via Aramaic-speaking Nestorian merchants from the region of al-Hira, where this tribe was dominant.

The traditional date for the introduction of Nestorian Christianity to China is 636, the date given on the beautiful black stone stele erected in 781 at the Tang capital of Xi'an in central China. The text consists of 1900 Chinese characters that give an account of the event, while a short inscription in Syriac, the language used by the Nestorians, gives a list of 70 Nestorian missionaries. Only a few years after the stele was raised, the Tang annals speak of 2000 Arab and Persian merchants trading in Canton: Clearly, the sea route between the Middle East and China was wide open.

The discovery of the sea route between the Arabian Gulf and China was an event equal in importance to the discovery by the Portuguese of the sea route to India. It was one thing to cross the Indian Ocean with the monsoon to Gujarat or the Malabar coast, or even to sail south of Sri Lanka and turn north to the Bay of Bengal or east to Malaya—but it was quite another to make the far longer voyage to Canton through a lesser-known sea with its own pattern of winds, to say nothing of the perpetual danger of piracy and the typhoons of the South China Sea. Yet in early Islamic times, direct sailing to Canton via the Gulf seems to have been common practice.

Pepper, shown here being harvested in Coilum in southern India, was one of the most profitable trade items shipped to Europe. However, the romance of the spice trade makes it easy to forget that the bulk of Indian Ocean shipping was devoted to cargoes like rice, hardwoods, tin, iron ore, horses, rope, textiles and other daily essentials.

The *bahr al-hind*, the “Sea of India,” or the *bahr al-sin*, the “Sea of China,” as the Indian Ocean was often called, was not a single entity. Those who sailed it said it was made up of seven different seas, each with its own characteristics—the traditional division from which we derive our expression for far-ranging travel, “to sail the seven seas.”

Here is how al-Ya'qubi, who died in 897, describes it, obviously following oral tradition:

Whoever wants to go to China must cross seven seas, each one with its own color and wind and fish and breeze, completely unlike the sea that lies beside it. The first of them is the Sea of Fars, which men sail setting out from Siraf. It ends at Ra's al-Jumha; it is a strait where pearls are fished. The second sea begins at Ra's al-Jumha and is called Larwi. It is a big sea, and in it is the island of Waqwaq and others that belong to the Zanj. These islands have kings. One can only sail this sea by the stars. It contains huge fish, and in it are many wonders and things that pass description. The third sea is called Harkand, and in it lies the island of Sarandib, in which are precious stones and rubies. Here are islands with kings, but there is one king over them. In the islands of this sea grow bamboo and rattan. The fourth sea is called Kalahbar and is shallow and filled with huge serpents. Sometimes

This 12th-century map of the Indian Ocean by al-Idrisi is so obviously imprecise as to seem almost decorative. (Note its similarity to the islands of the Indian Ocean in his world map on page 17.) But don't fault him for trying: It was one thing to be able to sail all the way to China and quite another to explain to a stay-at-home scholar where one had been. It is easy to forget what an achievement even a simple map represented. Until the 15th century, mariners knew maps could indicate relative shapes and sizes, but they were nearly useless for navigation.

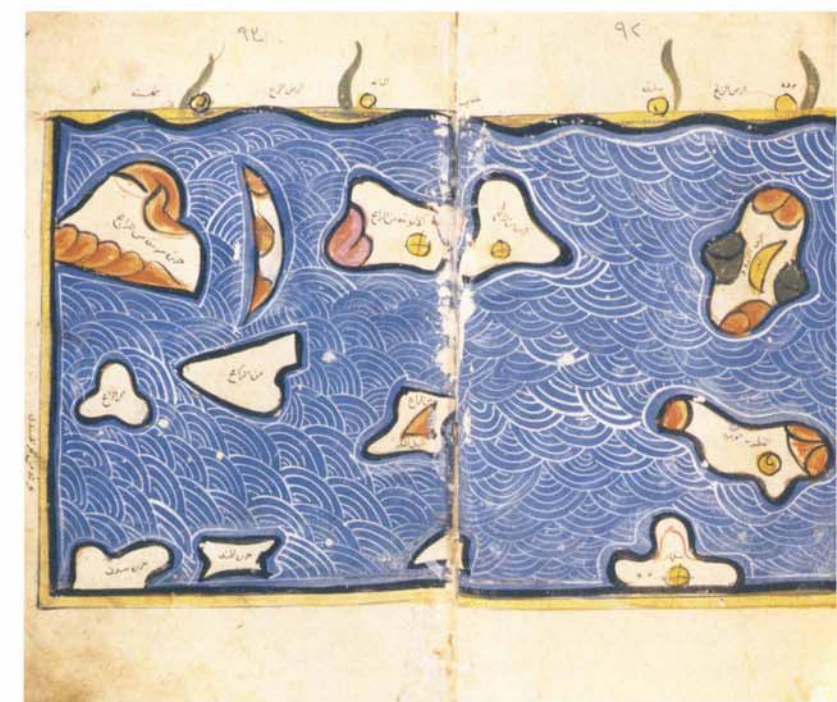
they ride the wind and smash ships. Here are islands where the camphor tree grows. The fifth sea is called Salahit and is very large and filled with wonders. The sixth sea is called Kardanj; it is very rainy. The seventh sea is called the sea of Sanji also known as Kanjli. It is the sea of China; one is driven by the south wind until one reaches a freshwater bay, along which are fortified places and cities, until one reaches Khanfu [Canton].

The names of these seven seas derive from the languages of the peoples who lived on their shores. The names preserve, as if in amber, the varied linguistic and cultural backgrounds of the seafarers who first explored these waters, and they sounded just as exotic to Arabic-speakers in the ninth and 10th centuries. These are the seas sailed by Sindbad in *The 1001 Nights*, for the stories of his adventures almost certainly date from the ninth or 10th century; they give a vivid picture of the dangerous and mysterious world of these early mariners. The little book by Buzurgh ibn Shahriyar, *'Aja'ib al-Hind (The Wonders of India)*, written in the 10th century, is a compendium of seafaring tales remarkably similar in tone to the adventures of Sindbad.

The most important surviving document on international trade in the ninth century is a brief account by Ibn Khurradadhbih, a director of the government postal service in Baghdad, called *Kitab al-Masalik wa 'l-Mamalik (Book of Roads and Kingdoms)*. It describes the overland and maritime routes that linked the Abbasid Empire to the world, including a description of the sea routes to India, Malaya, Indonesia and China. Most interestingly, Ibn Khurradadhbih's account describes regular, organized long-distance trade between western Europe and China long before the days of Marco Polo.

One of his most interesting passages describes a group of international traders called the Radhaniyya, who were Jewish merchants from the “land of the Franks,” that is, the Carolingian Empire. Their name may be derived from the Latin name of the river Rhône, and their most probable home port is Venice:

These merchants speak Arabic, Persian, Greek, Latin, Frankish, Spanish and Slavic, [Ibn Khurradadhbih wrote.] They travel from West to East and from East to West, sometimes by land, sometimes by sea. From the West they bring



eunuchs, female slaves, young boys, brocades, beaver, marten and other furs and swords. They set sail from the land of the Franks, on the Western Sea [the Mediterranean], and make for al-Farama [on the Isthmus of Suez]. There they transfer their merchandise to camels and go overland to [the Red Sea port of] Qulzum, a distance of 25 farsakhs. From there they set sail on the [Red Sea] and make for al-Jar and Jiddah.

Then they sail to Sind, India and China. On their return from China, they bring musk, aloeswood, camphor, cinnamon and other products of the East. They return to Qulzum, then back to al-Farama, where they take ship once again on the [Mediterranean] Sea. Some sail to Constantinople, to sell their merchandise to the Greeks; others go to the capital of the king of the Franks to sell their goods. Occasionally these Jewish merchants sail from the land of the Franks to Antioch. From there they go to al-Jabiyah, three days overland. There they embark on the Euphrates, making for

Baghdad. Then they go down the Tigris to al-Ubulla. From al-Ubulla they set sail for Oman, Sind, India and China.

Of the four routes of the Radhaniyya merchants he mentions, two are overland and two are maritime. They coincide with trade routes described in other Arabic sources.

But some scholars have been skeptical about the existence of a “Radhaniyya network.” Other sources, most notably the correspondence of Jewish merchants from Egypt preserved in the Cairo Genizah, a fundamental source for our knowledge of medieval commerce, show that the great majority of merchants confined their activities to their own (cont. on page 28)

## THE ARAB DISCOVERY OF THE SEA ROUTE BETWEEN THE ARABIAN GULF AND CHINA—VIA THE STRAIT OF MALACCA—WAS AN EVENT EQUAL IN IMPORTANCE TO THE DISCOVERY BY THE PORTUGUESE OF THE SEA ROUTE FROM EUROPE TO INDIA.



## Of Cowry Shells and Coir

Beyond the mouth of the Gulf, past Ra's al-Hadd, the Sea of Larwi begins. Beware, the way is barred by sea monsters upon whose backs grass and seashells grow. Mariners have taken them for islands and come to grief. They blow water into the air, high as a minaret, and when the sea is calm, sweep whole schools of unwary fish into their gaping mouths with their tails. Sailors beat wooden clappers at night to keep them at bay.

These monsters are not the same as the wal, which is 20 cubits long. When caught and slit open, a smaller version of itself is found inside, and this in turn contains another. Despite its size, the wal is preyed upon by a fish called laskh, no more than a cubit long. When the wal misbehaves, maltreating smaller fish, the laskh penetrates its ear and kills it. The laskh attaches itself to the hulls of ships; such ships are safe, for no wal dares approach. Then there are the flying fish with human faces, called mij. When they fall back into the sea, they are devoured by the fish called 'anqatus. For all fish eat each other.

The Sea of Larwi is separated from the Sea of Harqand by an archipelago of 1900 islands. They are closely spaced, the distance between islands being two, three or four farsakhs. They are small, but inhabited and ruled by a queen. The coconut palm thrives; pieces of ambergris the size of a house are thrown up on shore from the bottom of the sea. Wealth is measured in cowry shells, which are stored up in the royal treasury. The local name for them is kas-taj. The people of these islands are expert weavers. They make long chemises with sleeves, side

panels and pockets, all woven in a single piece. Their houses, boats and other things are made with equal skill.

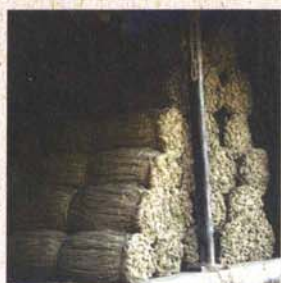
This is a paraphrase from the oldest firsthand Arabic account of India, island Southeast Asia and China, *Akhbar al-Sin wa 'l-Hind* (Notes on China and India), which dates from 851.

The ninth-century reader would have been struck no less than we are by the number of outlandish words in these three short paragraphs, and the use of all these exotic words is the author's literary device to prefigure the unfamiliarity of the region he was describing.

The voyage described in the *Notes* begins in the mysteriously named Sea of Larwi and immediately enters a stranger and more threatening environment than the familiar waters of the Arabian Gulf. The first landfall is an archipelago—its name is later given as Dibajat—that is ruled by a woman, where

wealth is counted not in gold or silver but in cowry shells, a gift of the sea. Just as Dibajat is outside the patriarchal system of Islamic lands, it is outside the bimetallic monetary system. Yet the inhabitants are far from primitive; they are skilled craftsmen and weavers, though they flourish far from cities. A civilization without cities is a contradiction in terms, and the author is warning the reader that his mental categories must be adjusted.

Even the naïve anecdotes about sea monsters make a point about appearance and reality, warning us not to accept a foreign environment at face value: What appears to be an island may turn out to be the back of a sea monster. The story of the wal, that when opened contains smaller replicas of itself, illustrates a different point of the author's: We are continually faced with reflections of our own beliefs. The vulnerability of the wal to the little laskh shows the fragility of power—something to be borne in mind when considering the vulnerability of the small trading emporia perched along the coasts of the great land-based, agricultural empires of India and China.



Above, left: Cowry shells were harvested by the hundreds of thousands in the Maldives. Above, right: Coir was prized by mariners because it resisted salt and sun better than any other cordage. Right: This detail from an 18th-century map by Pierre Mortier of The Netherlands names several dozen of the Maldivian Islands off the southwestern coast of India. Opposite: A print from 1845 shows cowry shells being used as money by an Arab trader.

With the force and simplicity of a proverb, a predator-prey model of marine life is presented: "For all fish eat each other." The reader would have been expected to draw the parallel with human society.

The writer's "archipelago of 1900 islands" is in fact the Laccadives and Maldives, 10 days' sail west of Calicut; their actual 2000-plus coral atolls stretch 1500 kilometers (900 mi) north to south, like a net deployed to catch ships. Five hundred years after the author of the *Notes* wrote down his metaphorical and fantastic tale, the Maldives and their waters were well integrated into the system of Indian Ocean trade. Ibn Battuta called them "one of the wonders of the world," and remarked on their annular form and proximity to each other: "A hundred or so are arranged in a circle like a ring, with an opening at one point to form a passage; ships may reach the islands only through this passage.... They are so close together that when leaving one, the tops of the palm trees on the next are visible."

In historical times, the Maldives have successively been Hindu, Buddhist and Muslim. Unusually, we have a precise date for the introduction of Islam there—July 1153—confirmed by an inscription in the Friday Mosque on Male, the principal island, and by an 18th-century Arabic history of the Maldives, the *Ta'rikh Islam Diba Mahal* by the jurist Hasan Taj al-Din. The latter states that the Buddhist ruler, Siri Bavanaditta Maha Radun, embraced Islam as the result of a miracle performed by a pious Muslim who was visiting the islands.

"A strange thing about these islands," wrote Ibn Battuta, "is that their ruler is a woman." So by a curious chance, a queen held power there again, 500 years after the *Akhbar al-Sin wa 'l-Hind* was written. Ibn Battuta calls her Sultana Khadija, but her Maldivian name was Rehendi Kambadikilage; she was 19th in the line of the ruling Theemuge dynasty. She ruled from 1347 to 1362, and her grandfather was Sultan of Bengal, the huge province in northeast India that stretched from the foothills of the Himalayas to the Ganges delta. This connection was of great importance: Bengal, until well into the 19th century, used cowry shells for its currency, and the leading exporter of cowries in the Indian Ocean was the Maldives. In exchange for their cowries, the Maldives imported their staple food, Bengali rice.

The Maldivians farmed their cowries by floating branches of coconut palms in the sea, to which the shells attached themselves. Ibn Battuta described the next step:

"They gather this animal in the sea and then put them in holes in the ground until the flesh rots, leaving the white shell.... They exchange [the shells] for rice with the people of Bengal, who also use them as currency. They also sell them to the people of Yemen, who ballast their ships with them instead of with sand. These cowries are also used in the lands of the blacks. I saw them being sold in Mali and Gawgaw at a rate of 1150 per dinar."

In the Maldives, the exchange rate at that time was 400,000 cowries to the dinar, or more when the cowry was weak. This was 1/350 of the Malian rate, a proportion that gives an idea of the profits possible in the cowry trade if the shells could be transported far enough from their

place of origin. And they were transported great distances: After Yemeni ships, Portuguese, Dutch and English ships also carried them as ballast, and huge quantities were auctioned to slavers in Amsterdam and London in the 18th century.

The other essential product of the Maldives was coir, the fiber of the dried coconut husk. Cured in pits, beaten, spun and then twisted into cordage and ropes, coir's salient quality is that it is resistant to saltwater. It stitched and rigged the ships that plied the Indian Ocean. Maldivian coir was exported to India, China, Yemen and the Gulf.

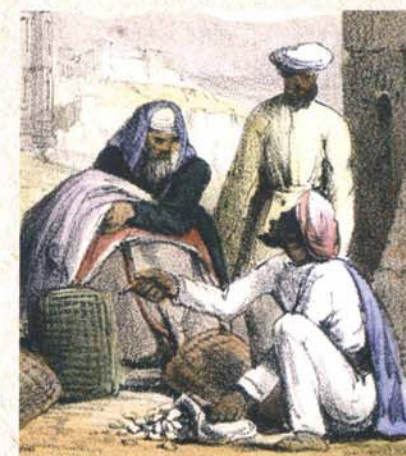
"It is stronger than hemp," wrote Ibn Battuta, "and is used to sew together the planks of Indian and Yemeni boats, for this sea abounds in reefs, and if the planks were fastened with iron nails, they would break into pieces when the vessel hit a rock. The coir gives the boat greater elasticity, so that it doesn't break up."

The Maldives were the first landfall for traders sailing to India from the Arabian Gulf, South Arabia or the Red Sea. In the Maldives, ships could take on fresh water, fruit and the delicious,

basket-smoked red flesh of the black bonito, a delicacy exported to India and China and Yemen. The people of the archipelago were gentle, civilized and hospitable. They produced brass utensils as well as fine cotton textiles, exported in the form of sarongs and turban lengths. These local industries must have depended on imported raw materials, although it is possible cotton was grown on some of the islands.

Although the archipelago produced not a single spice or exotic wood, nor any of the precious things commonly associated with the eastern trade, the inhabitants generated considerable wealth for themselves by developing their own resources. ☉

COWRY SHELLS WERE USED AS CURRENCY, COIR WAS USED TO SEW TOGETHER SHIPS. THE MALDIVES PROVIDED BOTH THESE ESSENTIAL ITEMS.



UPPER LEFT: RONALD SHERIDAN / ANCIENT ART & ARCHITECTURE COLLECTION; UPPER RIGHT: JOSEPH E. ARMSTRONG; LOWER: BUKHARI COLLECTION OF ANTIQUE MAPS OF ARABIA

BENJAMIN WATERHOUSE HAWKINS / SSPL / THE IMAGE WORKS



A panorama of Calicut, on the Malabar coast, shows several types of ships, shipbuilding, net fishing, dinghy traffic and a rugged, sparsely populated interior.

(cont. from page 25) regions, seldom making long journeys themselves. Long-distance trade consisted of a chain of interregional trips rather than the long and inevitably perilous journeys described by Ibn Khurradadhbih. This is certainly true for the period after about 1000, when the trade networks were denser and more organized; however, we have already seen that earlier maritime trade with China was indeed direct. The *Wonders of India* tells of a ship's captain from Siraf who made seven voyages to Canton and back, all before the middle of the 10th century.

The 10th-century Baghdadi historian al-Mas'udi, in his *Muruj al-Dhahab* (*Meadows of Gold*), explains how direct voyages to China were replaced with a system in which merchants stopped at a halfway house in either Sri Lanka or Malaya, where they purchased goods brought there from China:

*China was prosperous because of the justice with which the country was administered, as it always had been under its former kings, until the year 878. From that year until our own days [943], events have occurred which upset order and overturned the authority of the law. A rebel named Huang Ch'ao...ravaged the cultivated lands of the kingdom and set up his camp before Canton an important city situated on a river larger and more important than the Tigris. This river flows into the Sea of China, six or seven days' journey from Canton. Ships from Basra, Siraf and Oman and other kingdoms sail up it with their merchandise and cargoes. Huang Ch'ao besieged Canton and chopped down the mulberry groves which surrounded the city and had fed the silkworms that produced the silk that was exported to Islamic countries. Silk production and export came to a halt. He took*



*Canton and slaughtered 200,000 Muslims, Christians, Jews and Mazdaeans. This estimate could not have been made except for the custom of Chinese kings of keeping census lists of their subjects and neighboring nations tributary to them. They have officials charged with making the census, for they wish to have an up-to-date idea of the number of their subjects.*

Everything in al-Mas'udi's account is confirmed by Chinese annals—though the number of casualties among the merchants is clearly much exaggerated—and it serves to give an idea of the importance of Canton in international trade at the time. Its note of Jews among the merchants killed gives credence to Ibn Khurradadhbih's account of the Radhaniyya.

As a result of Huang Ch'ao's sack of Canton and the political uncertainty in southern China in the wake of his rebellion, the pattern of maritime trade changed. Al-Mas'udi's informant on Chinese affairs, the Sirafi merchant Abu Zayd, told him, "Today the city of Kalah [in Malaya] is the terminus for Muslim vessels from Siraf and Oman. Here they meet the ships from China. But this was not so in the past. Formerly, ships from China sailed directly to Oman, Siraf, the coast of Persia and Bahrain, al-Ubulla and Basra, and ships from these places sailed directly to China. It is only since people could no longer trust in the justice of governments and in their good intentions

**The position of the city of Hormuz, set on the strait at the bottom of the Arabian Gulf, was no less strategic in the days of Indian Ocean sailing, when it controlled traffic between Gulf ports and the East, than it is today.**



and since the state of China has become what we have described that merchants meet at this intermediate point."

These political events in China reverberated in the Arabian Gulf. The sack of Canton occurred in the very years that all of lower Iraq was in the throes of the Zanj Rebellion, the 20-year insurgency of slaves from East Africa who worked in the nitrate beds in the marshes of Lower Iraq. During this period, Basra, al-Ubulla and Abadan were dangerous places. Just as traders had moved away from Canton, so they moved south down the Gulf out of harm's way. They settled in Siraf, a small town on the Persian side controlled by men from Oman. Siraf became the main port for the eastern trade, and Basra never reclaimed its former position.

The classical pattern of Asian maritime trade was now set. First Siraf, then a series of other Gulf ports on both the Persian and Arabian sides, ending with Hormuz, became major emporia. The Malay-speaking peoples of Malaya and the Indonesian archipelago became the intermediaries between Islam and China, as Kalah and other ports became the nuclei of local dynasties that in time became Muslim. East of the Strait of Malacca, the seas were dominated by Chinese shipping. Indian ship-

ping continued to play a most important role, and ships from Gujarat, Malabar and Bengal plied the waters of the Indian Ocean. But the days of direct sailing between China and the Arabian Gulf were over.

The new system lasted for nearly five centuries, until the coming of the Portuguese. Although it began as a reaction to unstable political situations, other factors were at work as well. One was speed: Moving ports ever closer to the margins of the monsoon winds reduced sailing time, diminished the ever-present danger of shipwreck and allowed more goods to flow. By establishing emporia halfway to China, in ports like Kalah and later Malacca, the year-long voyage to China could be halved. Reducing the turnaround time made it possible to meet increasing demand, as markets expanded in both the Muslim world and in Europe. These emporia often enjoyed semi-independent or even fully independent status, also a major attraction to merchants.

The key figure in the system remained the small trader who, like Sindbad, risked his life and capital to set sail upon the Indian Ocean, to "go about among the islands, buying and selling." ●

**A NINTH-CENTURY  
REBELLION IN CHINA  
CHANGED THE PATTERN OF  
MARITIME TRADE, MAKING  
SUCH PORTS AS MALACCA  
IMPORTANT INTERMEDIARIES  
BETWEEN CHINA AND  
THE ISLAMIC WORLD.**

BRAUN AND HOGENBERG, CIVITATES ORBIS TERRARUM, 1572 (2)

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# Reader's Guide

WRITTEN BY JULIE WEISS



**For students:** We hope this two-page guide will help sharpen your reading skills and deepen your understanding of this issue's articles.  
**For teachers:** We encourage reproduction and adaptation of these ideas, freely and without further permission from *Saudi Aramco World*, by teachers at any level, whether working in a classroom or through home study.

—THE EDITORS

This month's edition of *Saudi Aramco World* focuses on one topic only—the history of trade in the Indian Ocean. To address this theme issue, this Reader's Guide is organized by article. The activities focus on two areas. The first is reading strategies: How can you best read a series of articles? What approaches can help you get the most out of what you read? The second is history: What tools do historians use to construct their stories of the past?

## Understanding What You Read

### Pre-Reading Activities

In this issue, you'll be reading a number of separate articles that all fall under the umbrella of one larger topic. So in addition to understanding each article on its own, you'll want to think about them together. To get you started:

### Read the Table of Contents.

The Table of Contents is especially important in this issue. Start with the "Author's Note." Jot down answers to these three questions:

- What human activity fueled curiosity about, and exploration of, the Indian Ocean?

- What weather pattern provided the structure for that activity?
  - What do these articles provide that has been missing from most histories of discovery?
- Keep the answers in mind as you read the individual articles.

Read the rest of the Table of Contents. Each article title is followed by a short summary called a "teaser." By reading the whole Table of Contents now, you can get an overview of the shape of the issue. Then, before you read each article, go back and reread the summary of it. Doing this is another way to focus your reading.

## Class Activities

The activities in this section are designed to engage students with the material in *Saudi Aramco World*. While this section of the Reader's Guide is usually organized thematically, this month's activities are organized by article, to help students make the most of a large amount of reading. If you're short of time, you might want to divide the reading among groups of students and do a jigsaw activity, in which each group presents what it's learned to the rest of the class. Everyone, however, should read "The Fable of the Rat."

### The Fable of the Rat

Author Paul Lunde uses this fable to make a point about history. Write a sentence summarizing his point. Write a two-paragraph fable of your own that makes the same point, but uses something more familiar than rats and prisons.

### Monsoons, Mude and Gold

- Read the summary of "Monsoons, Mude and Gold" from the Table of Contents. Then read the article.
- Using four different colors, highlight the parts of the article that address each of these four topics:
  - Venice's role in global trade
  - Gold: Who had it? Who needed it and why did they need it?
  - Exploration of the African coast and the search for water routes to India
  - The role of the monsoons
- Make a graphic illustrating the topics above. Using a photocopy of the map in the center of the magazine and the same colors used above, make arrows on the map to show:

- Gold going from Venice to Asia.
- The places European explorers looked for more gold.
- Trade goods, bought with gold, going from Asia to Venice. (On your copy of the map, list as many of these goods as you can, based on the article and other research that may be assigned.)

### The Leek-Green Sea

You will notice that this article has two distinct parts. In the first, author Paul Lunde describes Greek stories about India, told before Greeks had been to India. The second part of the article describes the Greek and Roman trade with India that began in the first century after Christ.

- Myths about India
  - Lunde identifies three *topoi*—standard ways of thinking about or describing something—about India that appear in Western accounts. List them. During what time periods did these *topoi* come into being?
  - Similar stories have been told about other places. Choose one of the following historical examples of an era when people told stories to each other about distant, hard-to-reach places: European explorers' ideas about the New World; ideas about the American "frontier" in the 18th and 19th centuries, or immigrants' ideas about America around 1880. Conduct research on your chosen topic, and share it with the class.
- Trade between Europe and India
  - When did this trade begin?

## Class Activities (cont'd.)

- What was the major economic result of the trade?
  - What knowledge made the trade possible?
- Write a sentence or two explaining how this article fits in to this whole edition of *Saudi Aramco World*. (You may want to do this after reading all of the articles.)

### The Seas of Sindbad

This article provides a chance to think about how historians construct stories about the past from evidence that they collect.

- Historians, like other storytellers, have to make decisions about when their stories begin and end. This article covers a period from the fourth century BC to the early Islamic period, approximately the seventh century of our era. Why do you think the author defined those centuries as a coherent time period? In other words, why is "The Seas of Sindbad" a separate article within this issue of *Saudi Aramco World*? Use the timeline on pages 31 and 34 to help you.
- Historians also look for turning points—big events that can define time periods. "Before X happened, the world was one way, but after X, it changed completely." Using the previous sentence as your model, identify "X" in this article. Write a short explanation of what the world was like before the turning point, and what it was like after.

### The Explorer: Marco Polo

What sources do historians use to construct their stories of the past? For this article, Paul Lunde uses Marco Polo's writings. As you read, highlight the information Lunde gleans from Polo's writings. Do a little research on the Internet to find out what other historians have written about Marco Polo's writings. Share your findings with the class. Discuss how what you've learned affects (or does not affect) your understanding of this article.

### The Traveler: Ibn Battuta

- As you read this article, trace Ibn Battuta's travels on the map. Put your finger on the line and trace it. Maps condense a lot of information into a small area, and simply touching the paper can help you remember much more of what you see.
- Ibn Battuta's travelogue both described the route he traveled and his experiences along the way. Historian Paul Lunde searches it to extract evidence that you might not expect. For example, what did Ibn Battuta report about gifts he received and a meal he ate in Mogadishu? How does Lunde use that information? What conclusions does he draw? Make a note about how Lunde's conclusions relate to the overall theme of the issue.
- Now try it yourself. List some objects in your home. Where did they come from? Mark the places on a world map. Think about the objects as Lunde did. What can you deduce about trade based on the information you've plotted on the map? You can try the same exercise with a meal, as Lunde did. Where did the different foods come from? Which were imported? Which plants or animals originated elsewhere in the world? Where did they come from? Plot the information on a world

map, as you did with the objects. Pretend you are a historian writing 500 years from now about these objects or foods. Remembering "The Fable of the Rat," what conclusions would you draw? Write about them as Lunde has. For some fun, see if you can, believably, *misinterpret* the information.

### The Admiral: Zheng He

Chinese motivation for exploring the Indian Ocean differed from the motivation of the other explorers you've read about.

- Look back at the Author's Note to refresh your memory. What motivated most of the explorers you've read about? What motivated the Chinese? Does the different motivation make the article about Chinese exploration different from the other explorations?
- Think about something you and a friend of yours have both done, but for which you had different motivations. Write about how, if at all, those motivations affected your actions and your friend's actions, and their outcome.

### The Navigator: Ahmad ibn Majid

- This article returns to the topic of the monsoons. Refer

back to the Author's Note to refresh your memory about the role the monsoons played in exploration of the Indian Ocean. Find the article in which the monsoons were last mentioned.

- Now put on your historian's hat. Paul Lunde says that the 1400's were a particularly important time period in the Age of Discovery of the Indian Ocean. Make a list of reasons the century was so important. Look back at the 20th century. Identify a decade or other chunk of time that was important. Make a timeline of the century, focusing mostly on your time period. Include what made it important, as well as some events before and after it, to put it in context.

### The Coming of the Portuguese

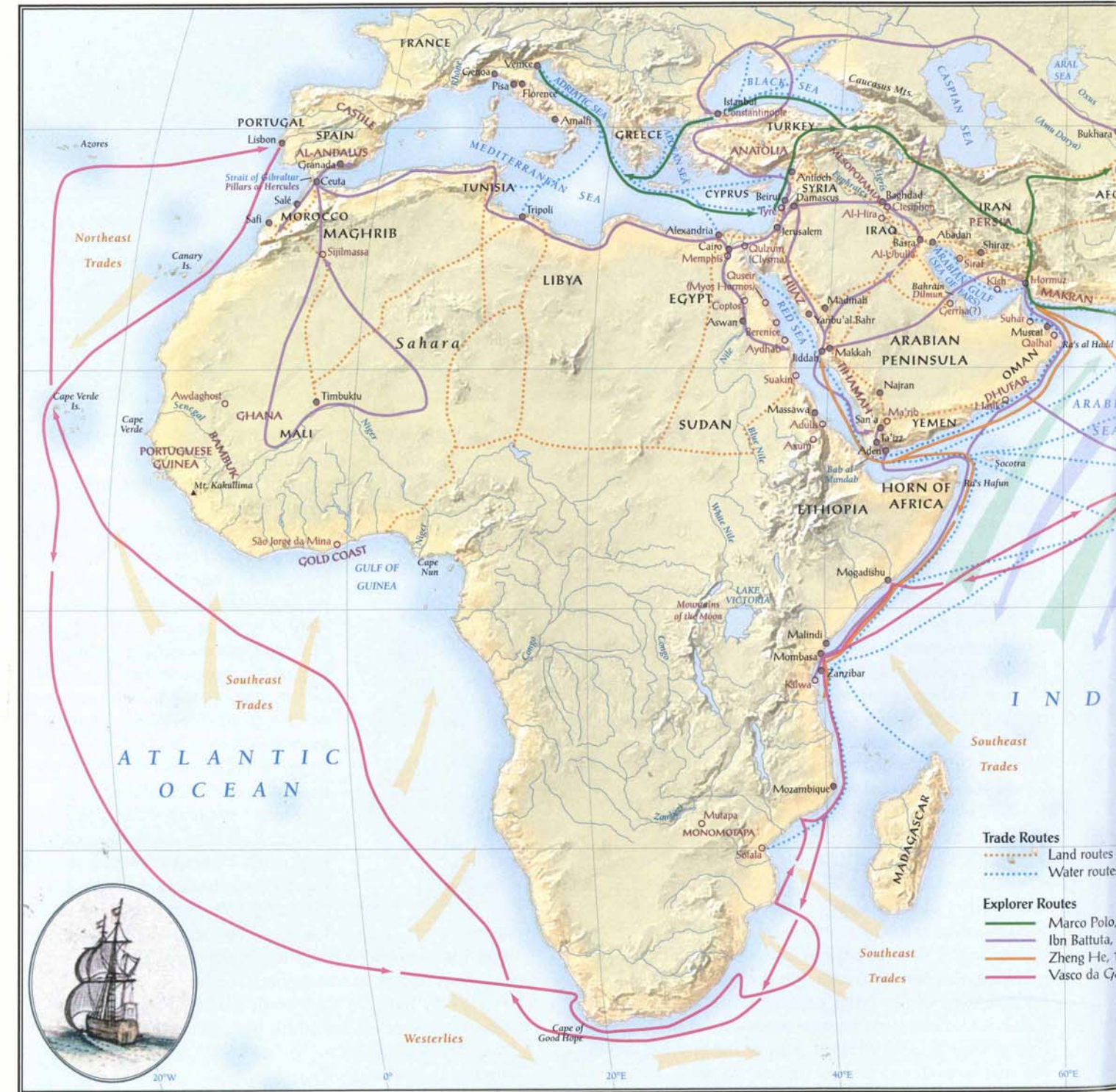
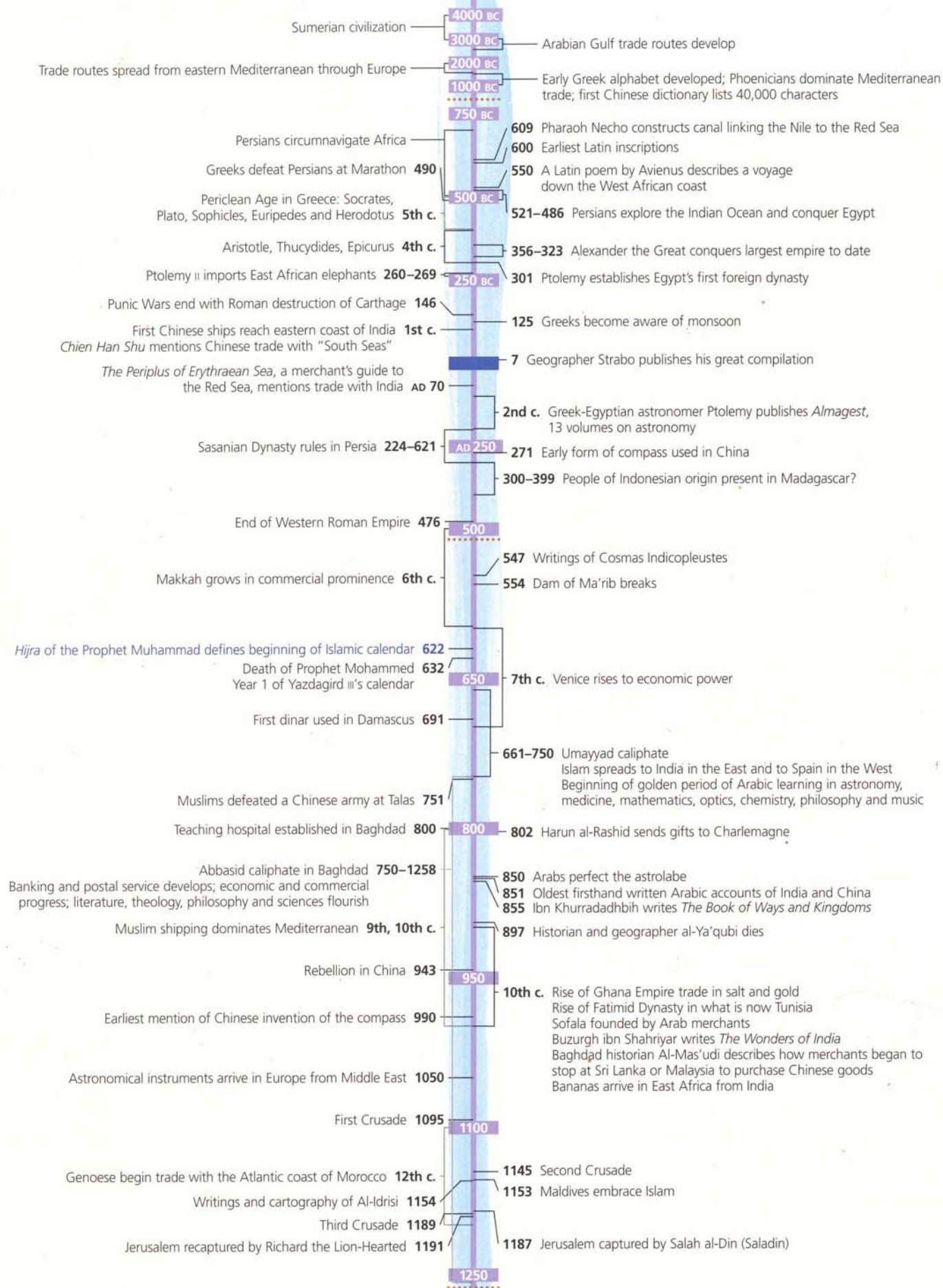
- This article chronicles Portugal's entry into Indian Ocean trade. Write an outline of the article based on the material in it. Discuss with a partner how the outline affects your understanding of what you've read.
- Look back at the Table of Contents and at your previous work, and then think about this article in the context of everything else you've read. As a class, discuss why Paul Lunde ended his history with this article. On your own, write a summary of the entire issue. Your summary should address:
  - When Lunde begins and ends his story of the Indian Ocean, and why he does so.
  - The actions, events and people you think are most important.
  - The most useful sources Lunde used, and what made them useful.
  - How the material you've read adds to or changes your understanding of global exploration.

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# The Indian Ocean



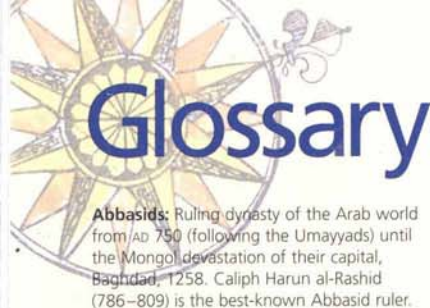


# and Global Trade



Fourth Crusade sacks Constantinople	1204	1200	13th c. Axial stern-post rudder and the compass reach the Mediterranean from China
Mongols invade China and establish Yuan dynasty	1279		1250–1517 Mamluk Dynasty rules Egypt independently
Vivaldi brothers of Genoa voyage down the West African coast	1291		1258 Mongols sack Baghdad and end Abbasid caliphate
Marco Polo sails through the China Sea, the Malacca Straits and the Indian Ocean	1292	1300	1271 Rasulids compile almanac for Indian Ocean trade
Mansa Musa passes through Cairo	1324		1275–1292 "Pax Mongolica" begins
Birth of Ibn Khaldun, historian and political scientist	1332		Marco Polo travels to China
Ibn Battuta dictates his <i>Rihla</i> to Ibn Juzayy	1354		Beginnings of the Silk Roads
Mongol leader Timur (Tamerlane) gains power	1360–1369		1325 Ibn Battuta departs Tangier
Timur defeats the Golden Horde	1395		1341 Ibn Battuta sets out for China
Timur conquers Damascus and Baghdad, disrupting land trade	1401	1400	14th c. Cinnamon gardens of Sri Lanka founded
Zheng He's first fleet leaves Nanjing	1406		1368 Ming dynasty overthrows Yuans
Ptolemy's <i>Geography</i> , translated into Latin, introduces the coordinate system	1406		
Nicoló dei Conti voyages in the Indian Ocean	1414–1439		1402 Chinese embassy to Malacca
Portuguese sailors reach the Madeira Islands	1420		1405 Death of Timur
Portuguese ships sail to the Azores	1427		1407–1409 Zheng He's second expedition visits what is now Thailand, Indonesia and India
On Zheng He's seventh expedition, Ma Huan visits Makkah	1431–1433		1409–1411 Zheng He's third expedition invades Sri Lanka and captures its king
China bans construction of oceangoing ships	1436		1413 Zheng He's fourth expedition includes Ma Huan
Pero Tafur visits Venice	1438		1415 Zheng He's fleet reaches Hormuz and explores the Middle East
Henry the Navigator promotes navigation, astronomy and cartography at Cape Sagrew	1443	1450	Henry the Navigator, at the head of a Portuguese armada, captures Ceuta
Ottomans capture Constantinople, ending the Byzantine Empire	1453		1432 Ahmad ibn Majid born in Oman
Ahmad ibn Majid writes the <i>Hawiya</i> , a compendium in verse of navigational lore	1462		1433 Zheng He dies at age 62
Ahmad ibn Majid writes his <i>Fawa'id</i> , an encyclopedia of navigation	1490		Ma Huan writes <i>The Overall Survey of the Ocean's Shore</i> and describes his expeditions with Zheng He
Pedro Alvares Cabral discovers Brazil	1500	1500	1481 Ethiopian mission reaches Lisbon
Withering of the balsam trees of Matariyyah	1500		1492 Granada falls to Christians; Muslims and Jews expelled from Spain
Portugal compiles mariners' tables of the sun's declination	1500		Ferdinand and Isabella finance Columbus's voyage to the New World
Portuguese defeat Mamluks near Diu	1509		Columbus lands in Hispaniola
Albuquerque take Malacca	1511		1497 Vasco da Gama circumnavigates Africa
Albuquerque takes Hormuz	1514		1508 Mamluks defeat Portuguese at Chaul
Ottomans use guns to defeat the Mamluk cavalry in Egypt	1517		1510 Albuquerque takes Goa
Babur founds Mughal Empire in India	1526		1513 Albuquerque lays siege to Aden but is repulsed
Discovery of silver mines in Iwamiginzan, Japan	1543		Portuguese reach Canton
Portuguese learn of Japan's surplus of silver when a ship blown off course lands on a Japanese island	1543		1516 Ottoman Turks take Syria and Egypt, become protectors of Makkah and Madinah
Spanish discover silver in Potosí, Bolivia	1545	1550	1519 Ferdinand Magellan begins circumnavigation of globe
Nagasaki is opened to western trade	1570		"Miller Atlas" produced
Spanish capture Manila	1571		1538 Ottomans capture Aden, ending Portuguese threats
			1546 Spanish discover silver in Zacatecas, Mexico
			1556 Portuguese establish a trading "factory" in Macao
			1564 Portuguese link Indian Ocean trade to the New World via the Philippines
			1582 Gregorian calendar adopted
			1626 Death of Francis Bacon, who proposed application of science to solution of practical problems
Dutch East India Company ships tea from China to Europe	1609	1600	1631 Taj Mahal built
The Dutch break Portuguese monopoly on passage around Africa and Indian Ocean	1640		
Cotton-spinning jenny revolutionizes British textile industry	1765		1757 Battle of Plassey; British East India Company becomes territorial power
Jouffroy demonstrates first steamboat (France)	1783	1800	1760 End of Mughal Dynasty; Britain becomes dominant power in India
			1807 Robert Fulton introduces the commercial steamboat





# Glossary

**Abbasids:** Ruling dynasty of the Arab world from AD 750 (following the Umayyads) until the Mongol devastation of their capital, Baghdad, 1258. Caliph Harun al-Rashid (786–809) is the best-known Abbasid ruler.

**Al-Idrisi:** Geographer, “the Strabo of the Arabs.” Born in 1100 and educated in Córdoba; traveled widely, eventually settling in Sicily. For the Norman king Roger II, he wrote *The Book of Roger*, a systematic geography of the world, still extant.

**Arabia Felix:** Latin for “happy” or “fortunate” Arabia, term used to refer to the southern Arabian Peninsula.

**Ayyubids:** Ruling dynasty of Egypt, Syria, northern Mesopotamia and (briefly) Yemen, from the late 12th century until 1250. Established by Salah al-Din (Saladin), who took Jerusalem from Crusader control in 1187 and greatly reduced Crusader principalities.

**caliph:** Successor of the Prophet Muhammad; leader of the Islamic polity.

**Cathay:** Name for North China popularized in medieval Europe by Marco Polo. The name derives from the name of the Khitan (or Khitai), a people of Manchuria.

**Chandragupta:** (ca. 321–ca. 298 BC) Indian emperor, founder of the Maurya dynasty. In 305, defeated Seleucus I, who had invaded India to regain Alexander the Great’s Indian provinces.

**Darius:** (521–486 BC) King of Persia who consolidated Persian power in the East, including northwestern India.

**dinar:** Islamic gold coin, first struck in Damascus in 691.

**dirham:** Islamic silver coin, possibly first struck in the time of the Caliph Uthman (644–656).

**ducato:** Gold coin introduced by the Republic of Venice in 1284. Used in trade worldwide.

**farsakh:** (Persian) The distance that can be walked in an hour, or about 5.75 kilometers (3½ mi).

**Fatimids:** The originally Tunisian dynasty that ruled North Africa from AD 909 to 1171. Founded Cairo in 969.

**florin:** Europe’s first gold coin, minted in Florence in 1252.

**frankincense:** Common name for the aromatic resins and oils of trees from the *Boswellia* family, found chiefly in the southern Arabian Peninsula. Important trade commodity.

**Geniza Letters:** Vast accumulation of Jewish documents—manuscripts, letters, commercial papers and much else—found in the 1890’s in the synagogue of Fustat (Old Cairo). Many written in Arabic and other languages (but in Hebrew characters), they bear dates between 870 and 1880. Immensely valuable primary material for the study of world trade ranging from northern Europe to India.

**Gilgamesh:** Legendary Sumerian king, subject of *The Epic of Gilgamesh*, the most complete version of which was preserved on 11

clay tablets by Assyrian king Ashurbanipal in the seventh century BC.

**Hajj:** The Muslim pilgrimage to Makkah; one of the five “pillars” of Islam, obligatory once in the lifetime of every Muslim who can afford the journey.

**Harappa:** Archeological site of an Indus Valley city inhabited since the eighth millennium BC.

**Harun al-Rashid:** (AD 786–809) Fifth and best-known of the Abbasid caliphs, his rule was marked by relative peace, prosperity and unity in the Islamic empire. A generous patron of artists and scholars. The splendor of his court is remembered in part thanks to its depiction in *The 1001 Nights*. His diplomatic mission to Charlemagne opened a period of technological, cultural and economic exchange with the West.

**Herodotus:** (ca. 484–425 BC) Greek historian, dubbed “The Father of History.” Born in Halicarnassus (now Bodrum, Turkey); traveled very widely. The first six parts of his nine-part *History* introduce most of the peoples of the ancient world and their customs, legends, histories and traditions. The last three treat the Greek–Persian rivalry. He was the first writer to critically evaluate historical, geographical and archeological material.

**Ibn Khaldun:** (AD 1332–1406) Arab historian and political scientist born in Tunis, one of the first to devise a secular historiography. His classic *Al-Muqaddimah (Introduction to History)* is a masterpiece of insight and social analysis.

**Ilkhanids:** (AD 1256–1356) Mongol dynasty that ruled Persia following the conquests of Genghis Khan and his grandson Hülegü Khan. Under Persian influence, the Mongol courts became centers of revitalized culture.

**João II:** (AD 1455–1495) King under whom Portugal expanded most vigorously in both the Indian Ocean and Brazil.

**Ka’bah:** A small, cubical stone building, “the House of God,” in the courtyard of the Holy Mosque in Makkah. Muslims believe it was originally built by the Prophet Abraham (Ibrahim) and his son Ishmael (Ismail). All Muslims worldwide turn to the Ka’bah in prayer five times a day.

**Mamluks:** Dynasty that ruled Egypt and the Levant as an independent state from 1250 until 1517 and as vassals of the Ottomans until 1811. Originally Turkish Kipchak slaves, later also Kurdish and Circassian, they formed a disciplined and well-trained military force that ultimately displaced the Ayyubids.

**Sir John Mandeville:** Ostensible author of a travel book that appeared in Anglo-Norman French in about 1356, purporting to be an account of the author’s journeys in the East. It is really a compilation, combining geography and natural history with romance and marvels.

**mangonel:** A military weapon like a catapult for throwing stones and other missiles.

**Mansa Musa:** African ruler during the zenith of the Mali Empire, 1312 to 1337. During his reign Timbuktu became a center of Muslim culture and scholarship.

**Ma’rib Dam:** Built around 500 BC, this earthen dam in the Kingdom of Saba (southwestern Arabia) irrigated an area large enough to support a population of 300,000 people. Lasting 1000 years, it was a symbol of Sabaeen technological and administrative ability. It collapsed finally in approximately AD 554.

**Ming:** (1368–1644) Chinese dynasty established after the expulsion of the Mongols. The Ming had a century of effective power, but declined in the 16th century and finally succumbed to a rebellion and the Manchu invasion.

**Muhammad ibn Tughluq:** (1290–1413) Sultan of Delhi, he seized power in 1325 and brought the sultanate to its greatest territorial extent, including the extreme south of India.

**myrrh:** Aromatic, resinous gum of the thorny flowering tree *Commiphora myrrha* of the Arabian Peninsula and India, commonly used from early times as incense. Important trade commodity.

**Necho II:** Pharaoh of Egypt from 610 to 595 BC, he used some 12,000 workers to cut a canal from the Pelusiac branch of the Nile to the Gulf of Suez, the earliest precursor of the modern Suez Canal.

**Nestorians:** A sect of the Eastern Orthodox (Christian) church named for Nestorius of Syria, who became Bishop of Constantinople in 428 but was exiled to Egypt three years later for heresy. The sect was almost eliminated by the 14th-century Mongol invasions.

**Ottomans:** A dynasty of rulers established in 1299 in northern Anatolia by Osman I. His successors expanded their territory to include all of Asia Minor and the Levant and much of southeastern Europe and the circum-Mediterranean Middle East. Considered one of the greatest and most powerful civilizations of the modern period. Their zenith under Suleiman I (1520–1566) represents a peak of human creativity, optimism, and artistry.

**Parthia:** A region corresponding approximately to the modern Iranian province of Khurasan, with part of southern Turkmenistan; seat of the first Persian Empire, which lasted from its defeat of the Seleucids in 238 BC to its defeat by the Sasanids in AD 224.

**Pedro Álvares Cabral:** (1467–1520) Portuguese navigator who in 1500 sailed the route to India pioneered by Vasco da Gama. To avoid contrary winds, he chose a far westerly course in the Atlantic—far enough west to touch Brazil, which he claimed for Portugal.

**Pillars of Hercules:** Classical name for promontories flanking the east entrance to the Atlantic from the Mediterranean: Gibraltar in Europe and Mt. Acha in Africa.

**Pliny the Younger:** (AD 62–ca. 116) Roman politician, orator and writer. His letters are an important source for historians.

**portulan** or **portolan:** A navigation manual or book of sailing directions illustrated with charts and descriptions of harbors and coasts.

**Ptolemy I Soter:** (ca. 367–283 BC) Macedonian general in the army of Alexander the Great who became ruler of Egypt after Alexander’s death (323 BC) and founder of the Ptolemaic dynasty, the first non-Egyptian rulers of Egypt.

**Ptolemy II Philadelphus:** (ca. 308–246 BC) Son of Ptolemy I, he built Alexandria into the cultural and commercial center of the Greek world, in part by greatly expanding the collection of books in the Library of Alexandria.

**qadi:** (Arabic) Judge.

**Rasulids:** (AD 1229–1442) A ruling dynasty of Yemen, of Turkic origin. They broke free of their Ayyubid overlords and located their capital at Ta’iz, which became famous for its artistic and intellectual achievements.

**reconquista:** (Spanish) The period during which the Christian kingdoms of Spain gradually conquered the territories that had been ruled by the Muslims since 711. The *reconquista* ended with the fall of Granada in 1492.

**Saba and Himyar:** Pre-Islamic kingdoms of the southern Arabian Peninsula whose economies were based on trade, especially the export of frankincense and myrrh. Saba was founded in 950 BC; it was conquered in 25 BC by Himyar, whose power collapsed with the collapse of the Ma’rib Dam in the sixth century AD.

**Safavids:** Iranian dynasty that ruled Persia from 1501 to 1736. The founder of the dynasty crowned himself shah of Azerbaijan in 1501 and subjugated Iran and Iraq in the following 10 years. The Safavids were defeated by the Ottomans in 1514, losing Baghdad as their capital, and built a new capital in Isfahan.

**Sasanians:** (AD 224–651) Ruling dynasty of the second Persian Empire. Frequently at war with Rome; besieged Constantinople. After 14 years of resistance, was defeated by the new Muslim state as it expanded into Persia. Last king was Yazdagird III.

**Seleucids:** Greek dynasty descended from Seleucus, one of Alexander the Great’s generals, who initially ruled an area extending from Asia Minor to India.

**stela:** (Greek; Latin *stela*) A vertical stone carved with reliefs, inscriptions and ornament.

**Strabo:** (ca. 63 BC–AD 23) Greek geographer and historian born in what is now Amasya in Turkey. His 47-book *Historical Sketches* has been almost entirely lost, but his 17-book *Geography* survived virtually intact, full of rich details of the lands and peoples of the Roman Empire and of such areas as India.

**Syriac:** Semitic language of the Aramaic group important today because Syriac literature preserves many translations of Greek texts that have not survived in the original.

**Timur (Tamerlane):** (AD 1336–1405) Descendant of Genghis Khan and founder of the Timurid Empire. By 1369, he had conquered present-day Turkmenistan and established Samarkand as his capital. Later, he extended his conquests between the Caspian and Black Seas, invaded India, captured Baghdad and Damascus, and ruled Anatolia.

**topos:** (plural: *topoi*) A recurring concept or idea; a traditional motif or theme in a literary composition.

**‘ulama:** (Arabic) The transnational community of the learned in Islam, derived from Arabic *‘alim*, “one who possesses knowledge.”

**wazir:** Title of a leading court official in a traditional Islamic regime, often a direct advisor to the ruler.

**Yuan:** (1246–1368) Mongol dynasty in China that continued the conquests of Genghis Khan and, under Khubilai Khan, returned the capital to Beijing and promoted construction and commerce. Chinese resentment of alien rule culminated in rebellion against the Yuan and the victory of the Ming.



Marco Polo died in 1324, the year before Ibn Battuta set off, at age 24, from his native Tangier. Though they never met, Ibn Battuta almost certainly encountered people in his Indian Ocean travels who had seen Marco Polo and his entourage, for in 1292 Marco Polo sailed through the China Sea, the Malacca Strait and the Indian Ocean on his way home to Venice. His mission, on behalf of Yuan ruler Khubilai Khan, was to escort and deliver a bride for the Mongol Ilkhanid sultan Argun, then ruling the Islamic heartlands.

The number of islands in the Indian Ocean, Marco Polo wrote, is 12,700, “as shown by the maps and writings of the practiced seamen who ply in these waters.” He added the disclaimer: “There is no man in all the world who could tell the truth about all the islands of the Indies.” His account of the major ports, products and trade routes is remarkably accurate, despite some understandable geographical confusion and unreliable estimates of distances. Above all, he conveys a sense of wonder and enthusiasm for this world in which “everything is different”—a phrase he repeats frequently. He is alive to human, linguistic and zoological diversity, and this explains the great charm of his book.

He is also perhaps the first European writer since classical times to mention the monsoon: “I must tell you that it takes a full year to complete the voyage, setting out in winter and returning in summer. For only two winds blow in these seas, one that wafts them out and one that brings them back; and the former blows in winter, the latter in summer.”

His voyage began with a sailing from Zaitun (Quanzhou) to the kingdom of Champa in South Vietnam, a distance he estimates at 2400 kilometers (1500 mi). Champa was a main source of



aloeswood, ‘ud in Arabic, much sought after throughout Islamic lands to this day as an aromatic, and ebony, used for making chessmen and pencases.

Although he did not visit Java, he mentions it is “the biggest island in the world,...a very rich island, producing pepper, nutmegs, spikenard, galingale, cubebs and cloves and all the precious

Marco Polo was 17 years old when he set out with his father for China and 38 when he embarked to sail home to Venice. This woodcut portrait is a copy of an illustration from a “Gutenberg edition” of his *Travels* printed in 1477.

spices.... It is visited by great numbers of ships and merchants who buy a great range of merchandise, reaping handsome profits and rich returns.... It is from this island that the merchants of Zaitun and Manzi [southern China] in general have derived and continue to derive a great part of their wealth, and this is the source of most of the spice that comes into the world’s markets.”

Java did not, of course, produce all the spices he lists: the cloves and nutmegs came from the Moluccas; the pepper may have been imported from Malabar. But all were available in its markets.

Marco Polo says Khubilai Khan had never been able to conquer Java. In fact, he attacked the year after Marco’s visit, following attempts against Burma, Champa and Annam. The Yuan sought to impose their power at sea as well as on land, but they were dogged by failure, beginning with the destruction of the great fleet sent against Japan in 1274. Their persistent and costly attempts at naval





Venice in the late 13th or early 14th century, where Marco Polo grew up in a merchant family.

domination nevertheless show their determination to control not only the overland routes to China, but the maritime ones as well—an ambition encouraged by Muslim traders in the Yuan empire, who would have welcomed the elimination of non-Muslim competition in Japan and South and Southeast Asia.

Marco Polo sailed from South Vietnam to the Malay Peninsula, where “gold is so plentiful that no one who did not see it could believe it. There are elephants and wild game in profusion.” There was also brazilwood, which produced a red dye for the textile industry and which Marco tried, unsuccessfully, to transplant to Venice.

He then sailed through the Strait of Malacca, which he is the first to

describe, to Sumatra, which he calls “Java the Lesser.” This was, he wrote, divided into eight kingdoms, each with its own language. One of the kingdoms was “Ferlec”—probably Periak in northern Sumatra. There, he says, the people used to be Hindus, but have converted to Islam through contact with Muslim merchants. He adds that this was true only of the inhabitants of the city, the mountain people being cannibals. The process of Islamization—at the hands of traders from India and mainland Southeast Asia, rather than from Arabia—was just beginning: This is the earliest reference to a Muslim sultanate in the Indonesian archipelago. He spent

five months in Samudra waiting for the northeast monsoon so he could continue his voyage west to Sri Lanka.

He estimates the circumference of Sri Lanka at 2400 miles, adding that it was once much bigger, measuring 3500, “as appears in the mariners’ charts of this sea.” He explains, “The north wind blows so strongly in these parts that it has submerged a great part of this island under the sea.” The reference to marine charts is reason to believe that they were used by Indian Ocean sailors; however, none have survived.

Then as now Sri Lanka was famous for precious stones, in particular rubies. The king owned a ruby the

length of a man’s palm and the thickness of his arm, flawless “and glowing red like fire.” This royal ruby is also mentioned in the seventh voyage of Sindbad; Marco Polo says Khubilai Khan sent an embassy to purchase it, but the king would not part with it.

Marco Polo landed from Sri Lanka

on the southeastern, or Coromandel, coast of India, and his long account of the country is filled with information on local customs, religion, dress and diet. He describes the pearl-fishing industry in the Gulf of Manaar and the importation of Arabian horses from Hormuz, Kais, Dhufar, Shihr and Aden. The king of Coromandel purchased an average of 2000 horses a year, paying a bit less than 250 grams

So important a trading center was Hormuz in the late 12th century that Marco Polo passed through it twice, once on his overland journey to China and again on his sea voyage home.

of gold (about 8 oz) for the finest. As they did not survive long in the climate, the demand was constant.

Marco Polo had much to say about the thriving trade in ports like Kayal,

SUMATRAN CITY-DWELLERS, MARCO POLO WROTE, USED TO BE HINDUS, BUT HAD CONVERTED TO ISLAM THROUGH CONTACT WITH MUSLIM MERCHANTS FROM INDIA AND MAINLAND SOUTHEAST ASIA.

Comorin, Quilon, Thana, Somnath and Cambay, all of which he visited. For several he gives the latitude by indicating the height of the Pole Star above the horizon, the same method used by Ahmad ibn Majid. These ports were linked to both China and the Mediterranean:

*There is great abundance of*

*pepper and also of ginger, besides cinnamon in plenty and other spices, turbit and coconuts. Buckrams are made*

*here of the loveliest and most delicate texture in the world. In return, when merchants come here from overseas, they load their ships with brass, which they use as ballast, cloth of gold and silk, sandal, gold, silver, cloves, spike-nard and other such spices that are not produced here.... Goods are exported to many parts. Those that go to Aden are carried thence to Alexandria.*

To the northwest, in Gujarat, Marco Polo notes the region’s independence and its own form of Indo-Aryan speech; he is one of the few medieval travelers to remark on linguistic diversity. He mentions the famous cotton of Gujarat and the export of leather goods to Arabia and other countries: “Suffice it to say that in this kingdom are produced leather goods of more consummate workmanship than anywhere in the world and of higher value.” The ships that called at Cambay brought gold, silver and brass, exchanging them for leather goods, cotton textiles and indigo.





He then crossed the Indian Ocean to the island of Socotra, a Nestorian outpost off the coast of southern Arabia that still had an archbishop appointed from Baghdad. Socotra was famed in the Middle Ages for the export of “dragon’s blood,” an astringent resin used for treating wounds. The island also exported ambergris, salt fish and fine cotton cloth. Ships bound for Aden called here to trade and reprovision.

Immediately after describing Socotra, Marco Polo gives a hearsay account of Madagascar, beyond which no one sails, he says, because of the strong southern current. (This was the current that led the Arab geographers too to believe that ships that sailed beyond Madagascar would be unable to return.) There, he says, ships come with cloth of gold and silks, trading for ivory and ambergris and other local products. Madagascar, he says, is also the home of the gryphon, and he says he talked to men who had actually seen it. It was not, as Europeans believed, a blend of bird and lion, but a true bird of colossal size: “They report that they are so huge and bulky that one of them can pounce on an elephant and carry it up to a great height in the air. Then it lets go, so that the elephant drops to earth and is smashed

to pulp, whereupon the gryphon bird perches on the carcass and feeds at its ease.” He then says that the islanders call this bird the *rukḥ*—an old friend from the tales of the voyages of Sindbad.

After this excursus on East Africa, Marco Polo proceeded to Aden, “the port to which all the ships from India come.” He describes how ships transfer their cargoes to smaller boats in the harbor, “sail for seven days along a river” (presumably the Red Sea), and then transfer the goods to camel-back and send them overland on a 30-day trip to the Nile and thence to Alexandria and the Mediterranean.

He describes three other flourishing Arabian ports—Shihr, Dhufar and Qalhat, all exporting fine horses to India; Shihr and Dhufar also exported frankincense. He then crossed the Gulf to Hormuz, not the “New Hormuz” that Ibn Battuta saw on the island of Jarun, but the mainland town. Marco describes the system of ventilators (*badgir*) that funneled cool air into the interior of the houses and made life bearable.

A number of other European travelers and missionaries took advantage of the *pax mongolica* to travel to the Far East in the early 14th century. Several of them, including Odoric of Pordenone, Fray Jordan Catalán de Sévérac and Fray Pascual de Vitoria, sailed home

through the Indian Ocean. They wrote short accounts of their travels that supplement, but do not eclipse, Marco Polo’s.

Nicolò dei Conti voyaged widely in the Indian Ocean between 1414 and 1439. His itinerary is remarkable:

Baghdad—Hormuz—Qalhat—Cambay—Malabar—Madras—Malapur—Sumatra—Burma—Ava—Pegu—Java—Borneo—Champa—Quilon—Cochin—Calicut—Cambay again—Aden—Berbera—Jiddah—Makkah—Cairo—Venice. He spent nine months in Borneo and learned from traders of the existence of the far-off Moluccas, the Spice Islands that the early Arab geographers had known only as *bilad manbit al-atar*, “the country where the spices grow.” He is the first author to refer to the bird of paradise, species of which live only in New Guinea and adjacent islands and whose feathers were much prized by



This statue of Marco Polo stands in Bangkok. It depicts him dressed and whiskered as he may perhaps have been at the court of Khubilai Khan, whom he served for 17 years before returning to Venice.

the Chinese and Ottoman Turks.

On his return to Europe, his caravan crossed with that of a Christian knight, Pero Tafur, near Mount Sinai. Nicolò told

Pero Tafur that he had left home at 18, lost his inheritance, spent a year at the court of Tamerlane in Samarkand, then set off for India. In India, Nicolò claimed, he had been received by Prester John, “very graciously and [he] showed me many favors, and married me to the woman I now have with me, and she bore me these children.” Prester John, he said, was a great lord with 25 kings in his service, and he had sent two unsuccessful expeditions in search of the sources of the Nile.

On his return to Italy, Nicolò dictated his travels to the papal secretary and learned humanist Poggio Bracciolini, to whom we owe the survival of so many key works. He toned down his account, producing a short, informative report of his travels. Much of his geographical information was recorded by the Venetian Fra Mauro on his wonderful map of 1459, a map which, incidentally, clearly shows Africa as a peninsula. Yet Nicolò’s conversation in the desert with Pero Tafur shows the medieval side of this remarkable man, whose obsession with Prester John and the sources of the Nile was shared by the Portuguese and spurred them to undertake their punishing voyages.

Nicolò had been able to travel freely while Tamerlane was alive, but when Tamerlane’s empire crumbled after his death in 1404, the overland routes were no longer safe, and Nicolò was forced to return to Italy by sea. He was not the only one inconvenienced by the death of the Central Asian conqueror, nor was he the only one to turn to the sea. 🌐

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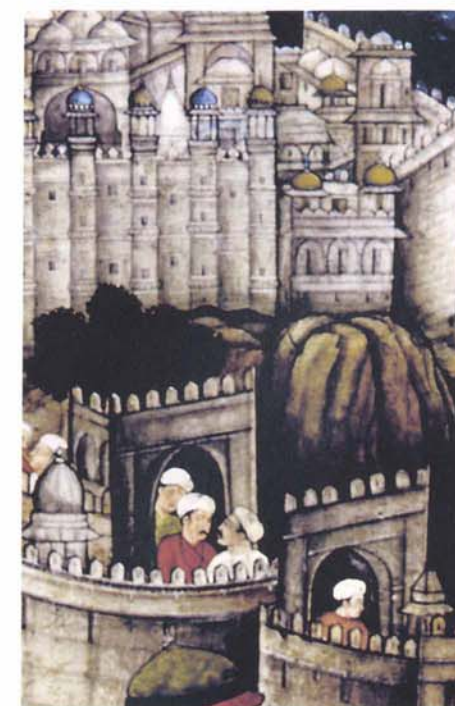
Ibn Battuta first set foot in a boat in 1330. He was 27 years old and already an experienced and resourceful traveler. The boat was a *jalba*, one of the notorious Red Sea craft described more than a millennium earlier in *The Periplus of the Erythraean Sea*, made of planks sewn together with coir and waterproofed with shark oil.

He was in Jiddah, about to embark for Yemen and possibly one of the Gujarati ports beyond, for he had already heard that the Muslim ruler of Delhi was recruiting learned men to help with the administration of his sultanate. His companion, Mansur, urged Ibn Battuta to join him in his own *jalba*, but Ibn Battuta declined: “I did so because his *jalba* was also loaded with a number of camels, and since I had never before made a sea voyage, this terrified me.”

He was right to be worried. After two days’ sail, the wind shifted and the little fleet was driven off course. A storm rose, waves broke over the gunwales, and the passengers were seasick. The boats were finally beached not in Yemen but on the opposite shore, on the African coast between ‘Aydhah and Suakin.

The travelers hired camels and made their way south through the desert to the little island of Suakin, in the center of a deep bay surrounded by coral reefs. The ruler was Zayd ibn Abi Numayy, son of the governor of Makkah and, as it happened, brother of Ibn Battuta’s traveling companion. Their return trip across the Red Sea took six days, for although the distance is short, the lateral crossing of the Red Sea can be extremely difficult unless the winds are right.

The travelers made their way inland. Ta’izz was the capital of Yemen and the residence of the sultan of the governing dynasty, the Rasulids, a Turkish military



This early 16th-century miniature from the Mughal School shows the walls of Delhi and, beyond them, the city that Ibn Battuta visited some 200 years earlier.

the town and the Bedouin often cut the road and prevent the townspeople from reaching them unless they are bribed with money and pieces of cloth.... It is the port for the merchants of India.” He goes on to list the Indian ports whose ships called, all on the west coast of India.

If Aden was as rich as Ibn Battuta says, how could the inhabitants allow the Bedouin to cut them off from their water supply? Though the traveler notes this almost in passing, it tells us something about the nature of the ruling dynasties of the 14th-century world.

Quite simply, the Rasulids of Yemen, the Mamluks of Egypt and Syria and the Delhi sultans all ruled vast dominions with too few troops. Control of their hinterlands, the spaces between major cities, was almost impossible. Even at the best of times, the ruler’s authority weakened as distance from the capital increased.

These military dynasties, whose efficacy lay in their “otherness,” had constantly to purchase new members in order to perpetuate themselves. Saladin, the founder of the Ayyubid Dynasty that ruled Egypt and Syria (and, briefly, Yemen), was a Kurd, and the sultans of Delhi and the Rasulids of Yemen were

elite like many other dynasties of the time. Later, Ibn Battuta would find that court ceremonies here resembled those of Delhi, “but I don’t know whether the sultans of India copied the sultans of Yemen, or the sultans of Yemen copied those of India.”

Ibn Battuta next went to Aden, at the time the largest and richest of all the emporia on the Indian Ocean. “It is a big city,” he says, “but no crops, trees or water are found there; during the rainy season water is collected in reservoirs. These lie some distance from



Turks, linguistically and culturally alien to the people they ruled.

The extreme example of this is the Mamluk Dynasty of Egypt, composed of Turco-Mongols and Circassians. Only slaves purchased in Central Asia or the Caucasus, usually as children, were allowed to join the ranks of the ruling caste. They were put through a rigorous course of training in the martial arts, at the completion of which they were granted their freedom.

After visiting Aden, Ibn Battuta sailed in 1331 to the East African coast, where he found another kind of state—port cities that might almost be called merchant republics. Mogadishu, now in Somalia, was the first he visited: “Mogadishu is a very large town. The people are merchants and very rich. They own large herds of camels...and also sheep. Here they manufacture the textiles called after the name of the town; these are of superior quality and are exported to Egypt and other places.”

As soon as he was settled in Mogadishu, the sultan sent him two small welcoming gifts: a plate of betel leaves and areca nuts, and a vial of Damascus rosewater. The first was the ritual welcoming gift of India, a custom that had spread to East Africa, and the rosewater from Damascus was to rinse his hands—another indication of far-flung commercial contact. The ceremonial meal that followed makes a similar, if more elaborate, point:

*They eat rice cooked with ghee, which is served on a large wooden platter. On top they set dishes of kushan. These are relishes, composed of chicken, meat, fish and vegetables. In one dish they serve green bananas in fresh milk, in another yogurt with pickled lemon, bunches of pepper pickled in vinegar and salt, green ginger and mangoes. These are like apples, but with a pit. They are very sweet when ripe, but when immature are acid like lemons;*

*they pickle the unripe mangoes in vinegar. They eat a mouthful of rice, then some of the salted and pickled relishes.*

The Indian influence on this meal is obvious, but it has been adapted to

## THE INDIAN INFLUENCE ON MOGADISHU'S FOODWAYS WAS OBVIOUS.

**CULTURAL MARKERS**

The custom of chewing betel leaves with prepared lime and areca nuts defines a huge cultural area extending from India through Southeast Asia, East Africa and parts of Arabia, cutting across religious and political boundaries. The ceremonial offering of betel, called *sirib* in Malaya and Indonesia, is an essential cultural trait. As Ibn Battuta says, “The offering of betel is much more important and shows more honor to the recipient than would the gift of silver or gold. Before eating the leaves, one takes areca nut, which is like nutmeg but broken up into little pieces, and chews them. Then you take the betel leaf with a little lime on it and chew it along with the areca. The leaves make the breath sweet and the mouth fresh. They aid the digestion and alleviate the effects of drinking water on an empty stomach.” Another defining custom of the monsoon cultural area was the custom of wearing a ceremonial dagger—the kris of Malaya and Indonesia and the *jambiyah* of Arabia. Nor was cultural interchange in the region limited to dress and food: Ibn Mujawir, writing in the 13th century, locates an episode from the Hindu epic, the *Mababbarata*—the burning of Lanka by the monkey warrior Hanuman—in Aden, rather than Sri Lanka.

local tastes. The rice and pepper would have been imported, but the mangoes were probably now grown locally, as was another Indian fruit, the *jammun* or *jambul* (*Eugenia jambolana*, java plum), which he encountered in Mombasa. Bananas also came to East Africa from India, perhaps as early as the 10th century. Although Ibn Battuta does not mention it, the meal was almost certainly served in Chinese bowls, much prized all along the East African coast. Special niches

were built into the walls of dwellings in order to display the finer pieces.

After Mogadishu, Ibn Battuta sailed further south to Mombasa and Kilwa, both important trading cities. The wealth of these cities was later to strike the Portuguese, for it was based on the export not only of gold, but also of iron, which was sent to India, worked into steel, then re-exported to the Middle East. Ivory and tortoise-shell were other valuable exports.

From Kilwa Ibn Battuta sailed to Dhufar, on the coast of the Arabian Peninsula, now in Oman. This was the Incense Coast of classical times. Millet and barley, he reports, were grown near the town, irrigated from deep wells, and rice was imported from India.

*The people of Dhufar are traders and have no other means of livelihood. When a ship arrives from India, the sultan's slaves go out to meet it in little boats, taking a full set of robes for the owner and captain, as well as for the kirani, the ship's accountant.... Everyone on board is granted hospitality for three days; when the three days are up, they are fed in the sultan's residence. The people do this in order to win the friendship of the ship-owners. They wear cotton clothes imported from India, fastening a length of cloth around their waist in place of trousers.... They manufacture silk, cotton and linen cloth of excellent quality.*

The fact that a local manufacturing industry was based on imported raw materials shows how regular shipping must have been, and how Indian Ocean traffic was not just in high-value, low-bulk items like spices. Textiles were always the bread and butter of the Indian Ocean trade, their production involving many ancillary techniques and employing thousands.

Bananas and betel, both of Indian origin, were cultivated in irrigated

plantations on the outskirts of Dhufar. Since remote antiquity, southern Arabia, with its maritime links to India and Ethiopia, had been the corridor for plant introductions from both East and West. Durum wheat, sorghum, cotton, sugarcane, taro, indigo, oranges, lemons and many other plants had traveled this way. Some, like wheat and sorghum, returned from India in improved varieties and were then widely diffused in Africa and Europe.

After visiting Oman, Ibn Battuta sailed across the Gulf to Hormuz. Until 1300, Hormuz had been located on the mainland. But in that year the ruler moved to the island of Jarun for greater security. “New Hormuz” was appallingly hot and dependent on the mainland for food, fuel and water, but it was strategically placed, controlling both sides of the Gulf at its narrowest point. It was “a big handsome city with excellent markets, for it is the port of India and Sind. Indian goods are exported from here to the two Iraqs, Fars and Khurasan.” Later, Hormuz would grow to rival Aden as the western hub of Indian Ocean commerce, replacing earlier Gulf emporia like Siraf, Kish and Suhar.

On September 12, 1333, after a two-year detour through Iran, Anatolia and Central Asia, Ibn Battuta finally stood on the banks of the Indus River, the western border of the domain of Muhammad Shah II, Sultan of Delhi.

To discourage casual visitors, each person wanting to enter India had to sign a statement in front of a notary swearing that he would remain forever. He also had to bring a substantial gift for the sultan—there were agents at the border who would advance money to travelers for this purpose—in order to demonstrate the seriousness of the immigrant's intentions; when he presented his gifts in Delhi, the

newcomer would receive many times their value in reciprocal gifts from the sultan. This exchange cemented a bond with tacitly understood mutual obligations.



From top: From Aden, at the farthest western reach of the Indian Ocean and one of the richest emporia of its time, Ibn Battuta sailed down the east coast of Africa. Among his ports of call was Mombasa (center), known for exports of gold and iron. He traveled as far south as Kilwa, still well north of Sofala, the most distant Arab port on the coast (lower). The progression from Aden's cosmopolitan bustle to Sofala's isolation is easily seen in these colored engravings from the late 16th century.

Ibn Battuta was advanced money by an Iraqi merchant from Tikrit and bought 30 horses and a camel-load of arrows. These were acceptable gifts for a ruler engaged in enlarging his domains, and Ibn Battuta's prudent investment was rewarded with the post of chief jurist (*qadi*) of Delhi at an annual salary of 12,000 dirhams—the revenues of two villages—and a lump-sum sweetener of 12,000 dinars. Overnight, the obscure Moroccan law student became a rich man.

Two years later, famine broke out in the sultan's territories and lasted for seven years, leading to widespread rebellion. Ibn Battuta saw that the Delhi sultanate was unraveling and applied for permission to make the pilgrimage to Makkah, the only politic way of leaving the sultan's service. At the last minute, the sultan asked him instead to lead 15 Chinese envoys and several shiploads of gifts to the Mongol Yuan emperor Toghon Temur. Ibn Battuta leapt at the chance for a graceful exit from a difficult situation combined with the opportunity to visit a new country.

The official delegation set out in the late summer of 1341 for the port of Cambay. It was attacked on the way by Hindu marauders, showing Muhammad Shah's tenuous hold on the countryside. Ibn Battuta was captured, escaped and rejoined his party. In Cambay he found a port whose wealth was based on the export of the finest cotton textiles in India, produced in the villages of Gujarat.

The mission met the sea captain and shipowner Ibrahim, who owned six ships. They must have been large, for into one of them, the *Jakar*, they loaded 70 horses, gifts for the Chinese emperor. They loaded 30 other horses, together with their own mounts, into the *Manurt*. Ibn Battuta embarked in the *Jakar*, along with 50 bowmen and 50 Abyssinian



warriors: "They are the lords of this sea, for even if there is only one of them in a ship, pirates and Hindus think twice about attacking."

As they sailed down the west coast of India, Ibn Battuta counted 12 semi-autonomous states, each of which owed its existence to the Indian Ocean trade. Whether the rulers were Muslim or Hindu, commerce was largely in the hands of Muslim merchants of the most varied origins. The rajahs of these little states collected a percentage from every transaction and in return allowed the merchant communities freedom of worship.

The richest towns of all were along the Malabar coast, the main source of the pepper that commanded such high prices in the markets of China, Alexandria and Venice but also of the teak used for building ships. The romance of the spice trade often obscures the fact that the bulk of Indian Ocean shipping was devoted to cargoes like rice, hardwoods, tin, iron ore, horses, weapons, textiles and other essential commodities.

When the little fleet reached Calicut, there were 13 junks anchored in the harbor, into which their cargo was transferred for the voyage to China. Their construction fascinated Ibn Battuta, who was especially struck by the self-contained compartments into which the hull was divided to minimize the danger of sinking. The junks had large cabins in which a number of people could travel in comfort, with private bathrooms and even stewards. A large junk could carry a crew of 1000, he wrote. This seems incredible, and scholars hotly debate the question of the size of medieval junks.

That night, a storm arose. Two large junks into which everything had been loaded put to sea, only to run aground and be smashed to pieces. Most of the passengers drowned, and the gifts for the Chinese emperor sank to the bottom. Ibn Battuta escaped, for he had gone ashore to attend Friday prayers in the mosque. A small junk, called a

*kakam*, with his wife aboard, also put to sea. With no possessions but his prayer rug and 10 dinars, Ibn Battuta set off on foot for Quilon, 300 kilometers (180 mi) down the coast, where he was told her ship was bound. There, he



How far into China Ibn Battuta traveled during his few months there is debatable. He claimed he reached Beijing, but his description of it is uncharacteristically thin. This painting from the early 15th century shows the houses of Kinsai, China, with characteristically curved roofs and bridges over canals.

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found no sign of the *kakam*. He later learned it had been captured by ships from Sumatra and that his wife was dead and all his possessions lost.

Ibn Battuta nevertheless decided to continue to China on his own. After multiple stops and multiple mishaps, he reached Sonargaon, in today's Bangladesh, where he bought passage on a junk for Sumatra.

Samudra, the port on the northern coast of Sumatra that has lent the island its name, was the first outpost of Islam in the huge Hindu-Buddhist area of

what is now the Indonesian archipelago; it was the model for the Malay-speaking Muslim principalities which, over the next 300 years, were to spring up there.

The ruler of Samudra, Al-Malik al-Zahir, sent Ibn Battuta on to Guangzhou, the city Marco Polo called Zaitun, in a junk outfitted at his own expense. He set sail in April 1346 as soon as the southwest monsoon began to blow.

China at the time was ruled by the Mongol Yuan Dynasty, whose most famous ruler had been Kubilai Khan, who ruled during the years Marco Polo traveled in China. Although not Muslim, the Yuan relied heavily on Muslim officials and military advisors and encouraged Muslim trade. It was under the Yuan that Muslim merchants established themselves at key nodes along the rivers and canals of the empire. This harnessing of the

highly productive Chinese economy to the overseas maritime routes stimulated the growth of the new Muslim principalities in the Indonesian archipelago and the establishment there of Chinese merchant communities. Malaya and Indonesia became the turntable through which Chinese manufactures were distributed to the West.

Though Ibn Battuta was impressed with China, particularly with paper money and the quality of Chinese silks and porcelain, it was the only country he ever visited that affected him with culture shock. "Every time I left my house, I saw reprehensible things. I was so disturbed that I stayed home most of the time, only going out when necessary." Yet at the same time, he opined, "China is the safest and pleasantest country in the world for the traveler."

His account of travels within China lacks the characteristic detail that makes the rest of Ibn Battuta's travels so entertaining, and his trips to Hangzhou and what is now Beijing are so vaguely described as to raise the suspicion that they are invented. His stay was brief, and by December 1346 he was back in Quilon, en route to his native Morocco. ●



When Tamerlane fell ill in 1404, his armies had already destroyed cities from Moscow to Delhi, as well as the principal centers of the Islamic heartlands. The Ottoman sultan Bayazid had been defeated; Mamluk Egypt had been granted a humiliating peace. Only China remained to be conquered.

But Tamerlane died in January 1405, on the eve of his long-planned invasion of China. The destruction of so many cities on the overland East-West trade routes—especially Isfahan, Baghdad, Damascus, Aleppo and Smyrna—and the slaughter of their populations had been a terrible blow to the Asian economy. The political instability following Tamerlane's death made the search for a sea route to India imperative, both for Europeans and for the Chinese.

As Tamerlane lay dying, the Yongle emperor of the Ming was already assembling an Indian Ocean fleet so large it would not be surpassed until World War II. And in 1405 the first of what would become seven major Chinese naval expeditions set sail to explore the Indian Ocean.

The admiral of all seven fleets was Zheng He, the great-grandson of a Mongol warrior. His original name was Ma Ho, the Chinese version of Muhammad, for his father was a Muslim who had made the pilgrimage to Makkah. In 1404, the emperor conferred on him the honorific Zheng, and he was appointed Grand Eunuch, thenceforth to be known as Zheng He.

The figures given for the size of Zheng He's first fleet seem incredible, but there is no doubting them. There were 317 ships of different sizes, 62



A modern illustration shows Zheng He and one of the giant, nine-masted "treasure ships" in which he made seven voyages around the Indian Ocean, traveling as far west as Jiddah, trading and collecting tribute. Had the voyages not been abruptly curtailed by a change of government policy, Chinese influence in the Indian Ocean might have countered that of Portugal.

(450') long by 57 meters (185') wide, carrying nine masts. This is twice the length of the first transatlantic steamer, which then lay four centuries in the future! Admitting the impossibility of these dimensions, it still seems certain that these were very big ships. Marco Polo voyaged to India in 1292 in a junk with a crew of 300, and Nicolò dei Conti mentions five-masted junks of perhaps 2000 tons.

The bow and stern of these junks were almost square and heavily reinforced, as was the hull, which had bulkheads that formed self-contained, watertight holds. The largest ships had as many as 50 cabins. The sails were made of bamboo matting, slung fore and aft. The mainsail was raised with a windlass; on the larger junks, it weighed five tons. They ships were slow-moving, making about four and a half knots, but they could sail close to the wind. They were perfectly suited to deep-sea sailing; however, as

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YU ZHENG / CHINA STOCK



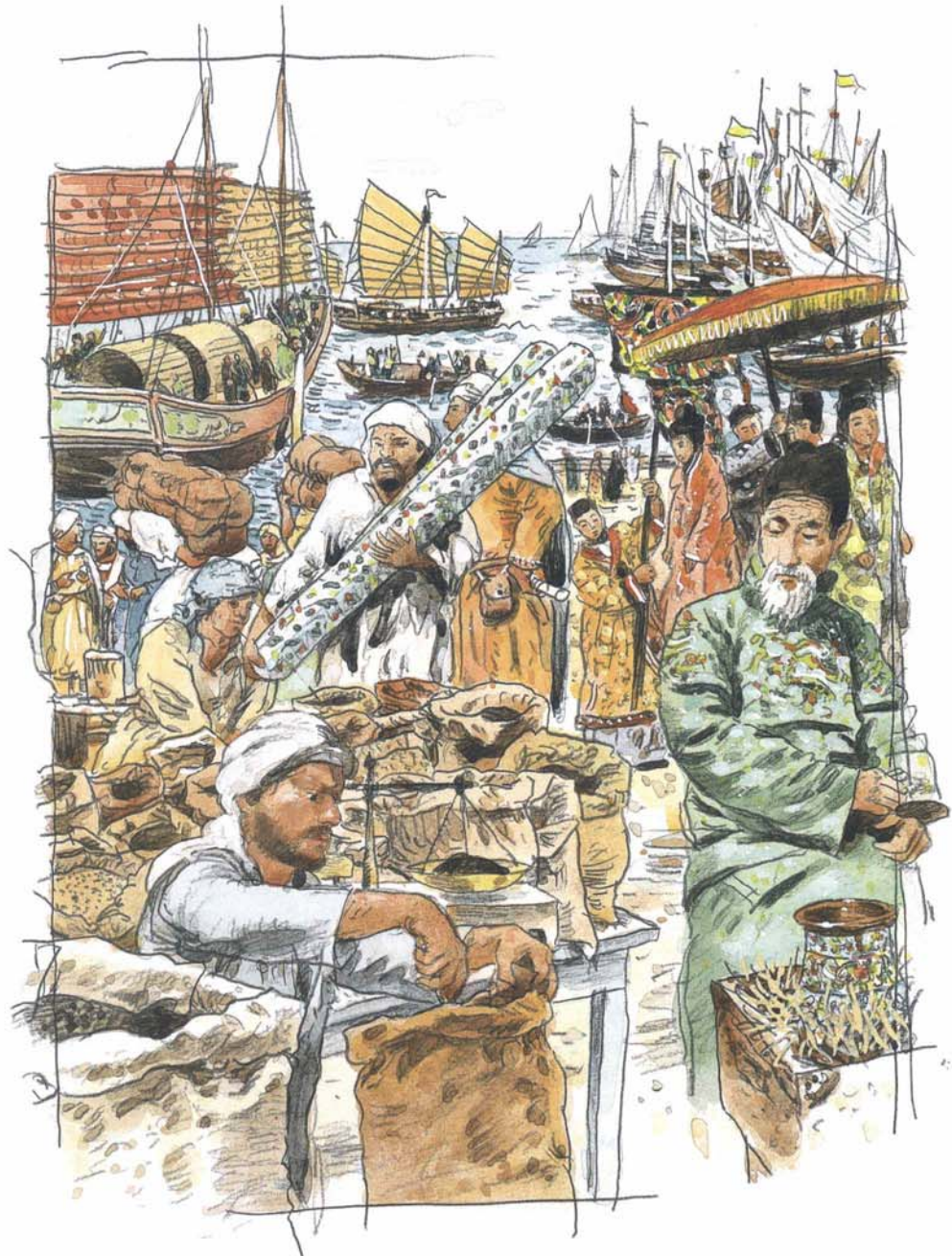
Ibn Battuta's disaster in Calicut showed, they were vulnerable in shallow water.

Each ship had an official whose job it was to take compass readings. It is hard to know how accurate these could have been, though Chinese navigators, like the Arabs, corrected their compass readings by celestial observation, using the cross-staff or the kamal. They found their latitude from the stars and had stellar charts to help them do so. Speed was measured by dropping a floating object over the side and timing its passage along the length of the ship. Watches were timed by burning an incense stick of standard length. Charts were used, but surviving examples are schematic representations of coastal features as seen from offshore, located by elevation of the Pole Star, rather than marine charts with compass bearings like European *portulans*.

Zeng He's first argosy called at Java, Sumatra, Aceh, Sri Lanka, Calicut, Champa, Malacca, Quilon and other ports. It brought so many goods to Indian ports that pricing them took three months. His second expedition, said to have set off in 1407 and returned in 1409, consisted of 249 ships; it visited Thailand, Java, Aru, Aceh, Coimbatore, Kayal, Cochin and Calicut, where it spent four months. The third expedition sailed in 1409 and returned in 1411, and although it was composed of only 48 ships, it allegedly carried 30,000 troops, stopping at Champa, Java, Malacca, Sumatra, Ceylon, Quilon, Cochin and Calicut.

These first expeditions were motivated above all by the desire of the Ming to display their power and gain token allegiance from the rulers of Indian Ocean emporia. If this submission was not forthcoming, Zheng He did not hesitate to intervene militarily: The ruler of Sri Lanka refused to recognize the emperor and was taken to China as a prisoner. The same fate befell two rulers in Sumatra. Some 37 countries and principalities sent representatives to China to make formal obeisance.

Zheng He's latter four expeditions were recorded by a Muslim Chinese named Ma Huan, who was attached as a translator to the fourth armada, which sailed in 1413 with 63 ships and 28,560 men. Born near Hangzhou, he



In 1432, Zheng He detached two ships to Aden, but political tensions in Yemen forced them north to Jiddah, where they offloaded silk, porcelain, musk and other goods.

had learned Arabic and perhaps Persian, probably from Muslim merchants.

This was the first of the seven expeditions to go west of India, and its objective was Hormuz. Ma Huan's notes on the ports visited on this and the three later expeditions were published in 1433, the year the final fleet returned, under the title *The Overall Survey of the Ocean's Shore* (*Ying-yai Sheng-tan*). He wrote, "I collected notes about the appearance of the people in each country, the variations of the local customs, the differences in the natural products and the boundary limits." In

the Chinese court, the expense of these extraordinary expeditions proved controversial, especially at a time when the Chinese army was in disarray following its defeat in Vietnam. Six years passed between the sixth and the final seventh expedition.

Ma Huan's survey is systematic. It contains 20 chapters of varying lengths, each dedicated to a specific place, beginning in the east with Champa in Vietnam and ending in the west with "The Country of the Heavenly Square"—Makkah. The principal entries are on Champa, Palembang,

Thailand, Malacca, Sri Lanka, Quilon, Cochin, Calicut, Dhufar, Aden, Hormuz, Makkah, Sumatra, Bengal, the Maldives and Laccadives, Mogadishu, Brava and Malindi. Each entry gives the essentials, in extremely concise form, of the political, military, religious and economic background of each port. Ethnographic information is included, particularly observations on dress and food and exhaustive lists of the trade goods available. Unfortunately, Ma Huan typically did not distinguish between the products of a particular country and the goods it merely trans-shipped. Giraffes, he noted, were available in Aden: Though the Chinese bought one as a gift for the emperor, it was of course not indigenous.

Though Ma Huan's little book has some curious mistakes and omissions, these are minor compared with the wealth of other detail. As a visitor from a different civilization, he noticed things unremarkable to more local visitors. For example, he compares the women's clothing to that of the Chinese goddess of mercy, Kuan Yin: "Over the body they put on a long garment; round the shoulders and neck they set a fringe of gemstones and pearls.... In the ears they wear four pairs of gold rings inlaid with gems; on the arms they bind armlets and bracelets of gold and jewels; on the toes they also wear toe-rings; moreover, they cover the top of the head with an embroidered kerchief of silk."

This sort of information is all the more valuable because of the general lack of iconographic evidence in the Arab world until the 16th century, when the first illustrated European travel accounts began to be published. In Yemen, Ma Huan seems to have been shown one of manuals on agriculture and agricultural calendars that were compiled under the Rasulid sultans, who encouraged agriculture and the introduction of new crops and techniques. "They will fix a certain day as the beginning of spring," wrote

Forty maps illustrating Zheng He's voyages were preserved by the 16th-century scholar Mao K'un and first published in 1628. The top map shows the stars to steer by between Rajasthan and Hormuz; center and lower segments show the coast of Persia and, in the foreground across the Gulf, Arabia.

Ma Huan, "and the flowers will in truth bloom after that day; they will fix a certain day as the commencement of autumn, and the leaves of the trees will in truth fall; so too as regards eclipses of the sun and moon, the varying times of the spring tides, wind and rain, cold and warmth."

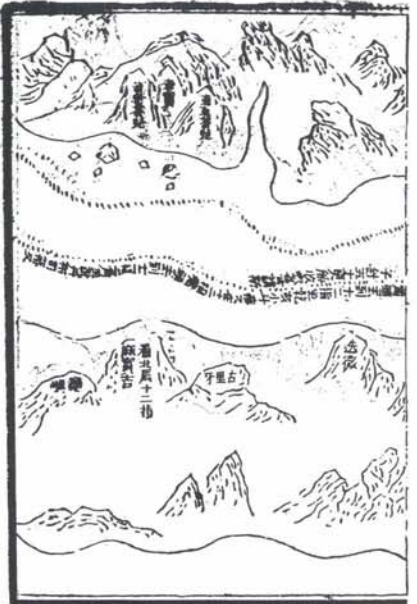
Like Ibn Battuta, Ma Huan carefully listed the food-stuffs available in the markets: "Husked and unhusked rice, beans, cereals, barley, wheat, sesame and

all kinds of vegetables.... For fruits they have...Persian dates, pinenuts, almonds, dried grapes, walnuts, apples, pomegranates, peaches and apricots." Of pastry, absent in Chinese cuisine, Ma Huan could only say that "many of the people make up a mixture of milk, cream, butter, sugar and honey to eat."

He was impressed by the quality of craftsmanship in Aden. This is remarkable, because it was a commonplace of Arab accounts of China that it was Chinese craftsmanship that exceeded that of all other peoples. "All the people in the country who make and inlay fine gold and silver ornaments and other such articles as their occupation produce the most refined and ingenious things, which certainly surpass anything in the world." He mentions the markets, the bath houses, the shops selling cooked food and even the bookshops.

When the time came for the Chinese ships to depart, the ruler of Yemen, al-Malik al-Zahir, gave Zheng He gifts for the emperor, among them two gold belts inlaid with jewels, a letter written on gold leaf and a number of exotic African animals. The animals were a tremendous hit in the Ming court, and paintings of zebras and giraffes by

THE MEMORY OF  
ZHENG HE'S VOYAGES  
LINGERED IN INDIAN OCEAN  
PORTS UNTIL THE COMING  
OF THE PORTUGUESE.



HSIANG TA, CHENG HO HANG-HAI TU, BEIJING, 1961 (3)

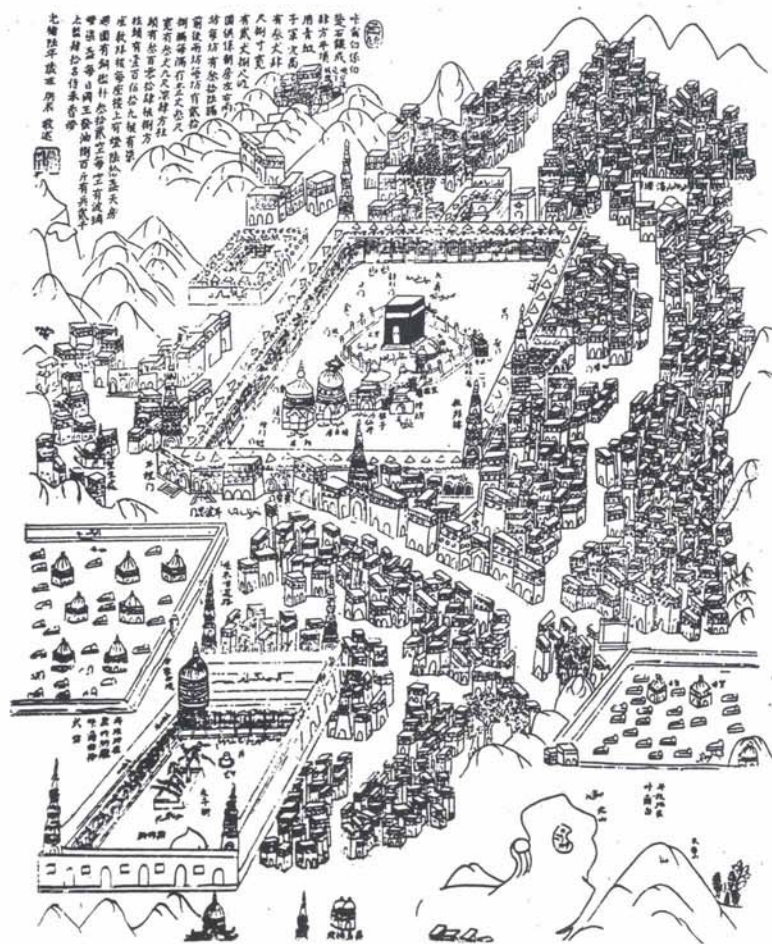


court artists have survived. As usual, the Chinese interpreted these gifts as tribute; indeed, they carefully noted every place from which they received goods as a tributary nation to China. We know from Yemeni chronicles that the locals regarded this with great amusement: "The Chinese seem to think everyone is their subject," said one Yemeni writer, "showing complete ignorance of political reality."

Zheng He visited Hormuz again on his seventh and final expedition, which lasted from 1431 to 1433. This time the fleet consisted of 100 ships and 27,500 men. He arrived when Hormuz was at the peak of its prosperity. "The king of the country," says Ma Huan, "and the people...all profess the Muslim religion; they are reverent, meticulous and sincere believers; every day they pray five times; they bathe and practice abstinence. The customs are pure and honest. There are no poor families; if a family meets with misfortune resulting in poverty, everyone gives them clothes and food and capital and relieves their distress.... The limbs and faces of the people are refined and fair; they are stalwart and fine-looking."

Hormuz was linked by overland routes to the major cities of Iran, Central Asia and Iraq. "Foreign ships from every place," says Ma Huan, "and foreign merchants traveling by land all come to this country to attend the market and trade; hence the people of the country are all rich." He describes the local marriage customs, funerary practices and diet.

This same expedition detached two junks to revisit Aden, but when they arrived in 1432, the political situation



This Chinese plan of Makkah dates from the early 19th century, and it was probably produced for the use of Chinese pilgrims. With buildings carefully drawn and major sites labeled in both Chinese and Arabic, it is a valuable rendering of the pre-modern city.

was tense in Yemen, and the captains of the junks, through a lengthy bureaucratic process, secured permission from the Mamluk sultan to offload their cargo of chinaware, silk, musk and other goods farther north, in Jiddah. Ma Huan disembarked there, at the city he called Chih-ta, and made his way inland to Makkah. He described the Ka'bah and the rites of the pilgrimage. He apparently had a painter do a painting of the Ka'bah, which on his return was presented to the emperor.

The Ming expeditions overawed many local rulers and established a long-lasting relationship between China and the key port of Malacca. They might well have led to a permanent Chinese presence in the Indian Ocean. Yet when the Hung-hsi emperor came to the throne in 1433, he put an end to the official voyages: Senior mandarins were complaining about the expense,

pointing out that profits to the state were almost nonexistent, and that the money could be better spent patrolling eastern coastal waters against the menace of Japanese pirates. A Chinese state monopoly of Indian Ocean trade thus gave way to private enterprise, which the Ming had vainly tried to stamp out. It is probable that leading merchants in China used their wealth to support the court faction opposed to state-sponsored trade.

The memory of Zheng He's voyages lingered in Indian Ocean ports like Calicut and Malacca until the coming of the Portuguese in the early 16th century. When elderly inhabitants saw the bearded, light-skinned foreigners, they thought at first that the Chinese had returned. In China itself, the thousands of tons of pepper brought back by Zheng He's treasure ships were used for years as currency,

particularly to pay the army, in lieu of the traditional silk.

Had the Ming maintained their naval presence in the Indian Ocean, the Portuguese would have been faced with a formidable rival. In fact, their withdrawal helped make it relatively easy for the Portuguese, who made up in armaments what they lacked in numbers, to impose their will on the monsoon ports.

From the point of view of geographical discovery, the Ming voyages must rank as the earliest state-sponsored effort to seek out new lands, markets and spheres of political influence. That the same idea occurred to the rulers of both the Far East and the "Far West" almost simultaneously is intriguing, and it shows that—long before the emergence of a "global economy" in the late 20th century—East and West were responding to the same rhythms of political and economic change.

And

He it is who appointed the stars to you, that you might guide yourselves by them through the darkness of land and sea.

—The Qur'an, Sura VI, verse 97.

Ahmad ibn Majid was born in Oman, probably in 1432, the year Zheng He's junks docked at Jiddah. The last of his approximately 40 known compositions, a poem on the heavens, is dated 1500, the same year Pedro Álvares Cabral discovered Brazil on his way to India by way of the Cape of Good Hope—thus linking Europe, the New World, Africa and Asia in a single voyage. Ibn Majid must have died soon after that date, his life spanning the most critical century in the history of the ocean whose currents, winds, reefs, shoals, headlands, harbors, seamarks and stars he spent a lifetime studying.

His most important work was *Kitab al-Fawa'id fi Usul 'Ilm al-Bahr wa 'l-Qawa'id* (*Book of Useful Information on the Principles and Rules of Navigation*), written in 1490. It is an encyclopedia of navigational lore: the history and basic principles of navigation, lunar mansions, rhumb lines, the difference between coastal and open-sea sailing, the locations of ports from East Africa to Indonesia, star positions, accounts of the monsoon and other seasonal winds,

typhoons and other topics for professional navigators. He drew from his own experience and that of his father, also a famous navigator, and the lore of generations of Indian Ocean sailors. The *Book of Useful Information* deals not only with the monsoon system, but also with the finer details of local wind regimes. The prevailing winds in the Red Sea north of Jiddah were among the most difficult, Ibn Majid writes, because they blew from the north all year round. Normal practice was to sail to Jiddah and there either transfer cargo to smaller boats, whose pilots were experienced in the local conditions between Jiddah and

skills upon which the entire trading network depended.

By Ibn Majid's time, four major innovations—two of them from China—had improved ship design and navigation.

Around the year 1000, the Chinese developed the axial stern-post rudder. It replaced the long "steering oar," which was always awkward to handle and prone to snap in heavy seas. The hinged rudder with its tiller made sailing easier and safer, especially in bad weather. It was not until the 13th century, however, that it reached the Mediterranean, probably about the same time as the compass, or a little later.



Suez, or to send cargoes overland. Even to Jiddah, and to 'Aydhah on the Egyptian side, access was only possible during the northeast monsoon, between October and mid-March. Other specialized knowledge was needed to sail elsewhere: south of the equator, for example, where the monsoons gave way to the trade winds. The China Sea too had its own wind regime. Only a lifetime of sailing could teach a *mu'allim*, or master navigator, the

ISAAC, THE ARABIAN PROPHET... SHANGHAI, 1921

NORMAN MACDONALD

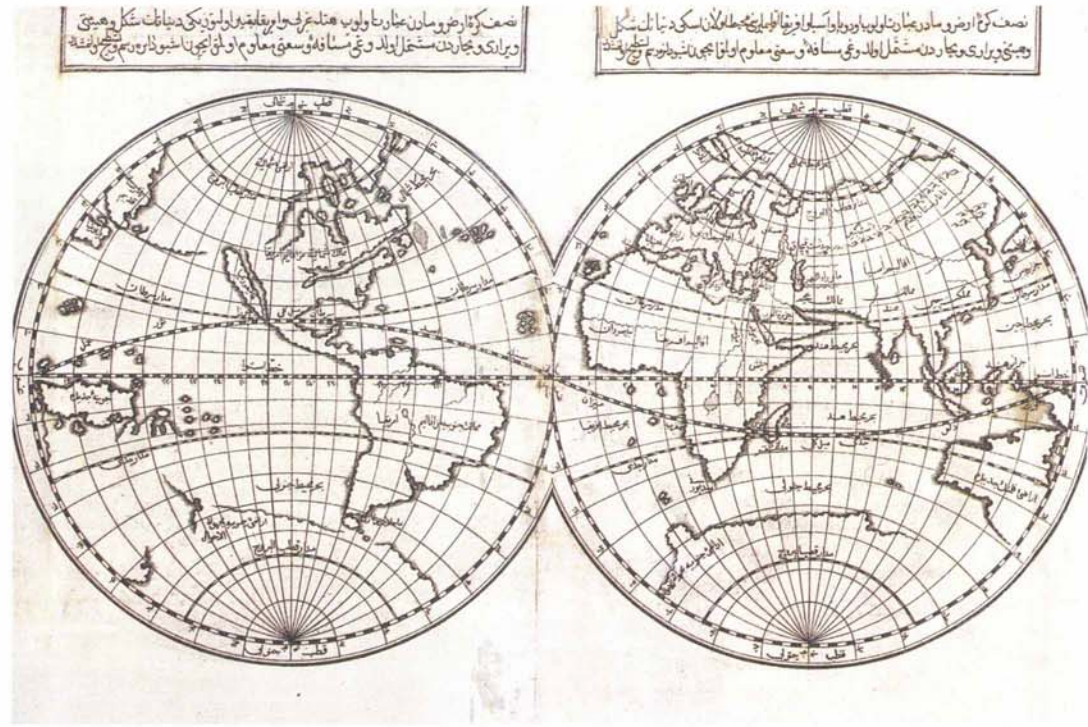


A 1728 hemispheric world map by Ibrahim Mūteferrika clearly shows the full shape of South America and some knowledge of Antarctica, while displaying uncertainty regarding western North America, Japan and Australia.

From the Arabian tradition of seafaring came the lateen sail, which had long allowed Arab dhows and other ships to sail closer to the wind than their Mediterranean counterparts. By the mid-15th century, however, the Portuguese and Spanish had combined it with their own square-rigged tradition, and it proved essential to their successes in both Asia and the New World.

Navigation relied on the third and fourth innovations—"fingers" and the *kamal*, and the early compass—for fixing a position at sea and setting a course out of sight of land. Ahmad ibn Majid and his fellow navigators used the Pole Star, determining latitude by its height above the horizon. By keeping the Pole Star at the same height, one could sail east and west on the same latitude; that height could be measured by the number of arm's-length finger-widths between the horizon and the star. Cambay, for example, lay at a latitude at which the Pole Star lay 11 fingers' width above the horizon. (This method was more precise than it might seem: Each "finger" was divided into eight parts.)

Another method of measuring the Pole Star's height above the horizon was by using the *kamal*. The *kamal* was a small rectangle of wood attached to a cord which was calibrated by knots along its length. Each knot represented the latitude of a particular port. The navigator held the cord in his teeth at a certain knot and held the *kamal* at eye level at the cord's full length, aligning



the lower edge of the rectangular plaque with the horizon. When the upper edge intersected the Pole Star, the ship was on the latitude of the desired port.

### NAVIGATION OUT OF SIGHT OF LAND RELIED ON "FINGERS" AND THE KAMAL AND ON THE EARLY COMPASS.

#### AHMAD IBN MAJID ON EUROPEAN NAVIGATION

"We have 32 rhumbs, and *tirfa*, and *zam*, and the measurement of stellar altitudes, but they have not. They cannot understand the way we navigate, but we can understand the way they do; we can use their system and sail in their ships. For the Indian Ocean is connected to the All-Encompassing Ocean, and we possess scientific books that give stellar altitudes, but they do not have a knowledge of stellar altitudes; they have no science and no books, only the compass and dead reckoning.... We can easily sail in their ships and upon their sea, so they have great respect for us and look up to us. They admit we have a better knowledge of the sea and navigation and the wisdom of the stars."

Distance east and west was measured by time, not in hours but in *zam*, three-hour increments—the length of a watch on board—measured by the burning of a standardized stick of incense.

Portuguese navigators, on the other hand, found latitude by measuring the altitude of the sun, rather than the Pole Star, and estimated their easting and westing by dead reckoning. Under King Manuel, tables of the sun's declination were compiled for mariners, based on similar tables prepared by Arab scholars in the mid-13th century. When the first European printed work on navigation appeared in 1509, it contained a method of "raising the Pole Star" that almost certainly came from Indian Ocean navigators, for the East-West dialogue on this subject had begun almost immediately: In 1499, Vasco da Gama's pilot had a long conversation on navigation with the Gujarati pilot who led the Portuguese to Calicut. Similarly, the earliest European maps of the Indian Ocean give the position of ports in *pulgadas*—"fingers"—and the Chinese used this method as well.



This model of a mariner using a *kamal* shows him holding the knotted rope in his teeth. The knots were a system by which the navigator could keep the wooden card at a distance from his eyes that corresponded to the latitude of ports and islands.

The development of the compass derived from knowledge of the properties of the lodestone, whose ability to attract iron had been known since remote antiquity. The late Joseph Needham showed how Chinese diviners in the second century BC cast lodestone spoons to align north-south. From this came the invention of the magnetized needle, which Ibn Majid attributed to the mythological patron of Indian Ocean sailors, al-Khidr, who, according to legend, had guided Alexander the Great over land and sea.

The compass proper is also a Chinese invention. The earliest known mention of it occurs in 990, and a Chinese encyclopedia of 1135 describes one in the shape of a wooden fish with a piece of magnetite inside that was floated in a bowl. In 1242 an Arabic text describes a compass seen on a voyage from Syria to Alexandria that was in the shape of a hollow iron fish that similarly floated on water in a bowl.

Toward the end of the 13th century someone—probably an Italian—fixed the magnetized needle to a wind rose. This created the basic form of the compass we know today.

#### THE CALENDAR OF YAZDAGIRD AND THE RASULID ALMANAC

A solar calendar was as necessary for navigation as it was for agriculture. The Islamic lunar calendar could not be used, because there was no correlation between the months and the seasons. In Yemen, the Roman Julian calendar was used for agriculture, and a particular form of the Persian calendar was used as a navigational calendar. It was called the Calendar of Yazdagird, after the last Sasanian monarch, Yazdagird III, who established it in 632. This Persian calendar is of great significance, for it was the calendar used in the Middle Ages by Indian Ocean sailors from the Arabic-speaking world.

Year 1 of Yazdagird's calendar corresponds to 632, and the first day of the year was the summer solstice, June 16. Although the calendar was divided into 12 months, which were given their Persian names, the days of the year were simply numbered consecutively, 1 to 365. This is how Ahmad ibn Majid uses the system to describe a voyage he made in 1471: "We set sail on day 135, only reaching Jiddah after a difficult voyage. We sighted Ra's Hafun on day 175 and entered the Bab al-Mandab on day 200 against strong northerlies...."

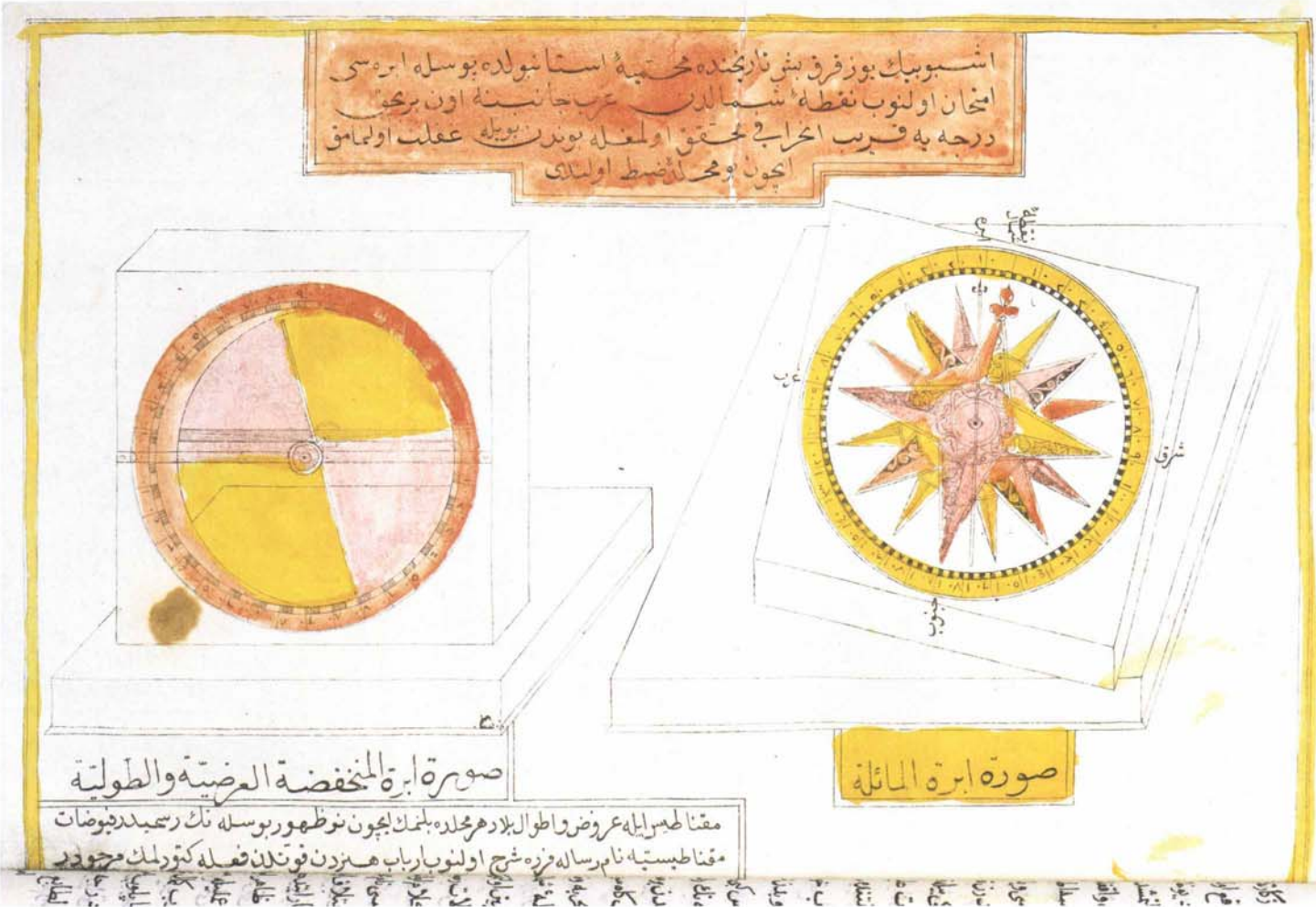
The earliest evidence for the existence of this navigational calendar is an almanac composed in 1271 by the Rasulid sultan of Yemen, al-Malik al-Ashraf. The almanac is based on much older sources, most probably originating in the Gulf port of Siraf, the crucible of early Islamic Indian Ocean navigation. Siraf was destroyed by an earthquake in 977, and the wealthy merchants, shipowners and navigators of the port emigrated, spreading out along the South Arabian, Red Sea and East African coasts. They took with them their capital, their know-how and their networks of international contacts. This diaspora from Siraf had much to do with the growth of ports like Jiddah and Aden. In East Africa it laid the foundations for what became the ports of Mogadishu, Kilwa and Malindi.

The almanac is a perfect example of how the diverse strands of learning that make up classical Islamic civilization were woven into a coherent whole: Month names are in Syriac, derived from Old Babylonian; to these are added Persian month names from the calendar of Yazdagird. The equinoxes and solstices are marked, and the rising and setting of prominent stars and the *anwa*—constellations whose appearance at dawn heralded rain—are given according to the old Bedouin system. Measurements of shadow lengths throughout the year are included. The days are marked to allow correlation with the Roman Julian calendar. And there is useful information on times to sow and reap, on insect pests, healthy and unhealthy seasons and much more.

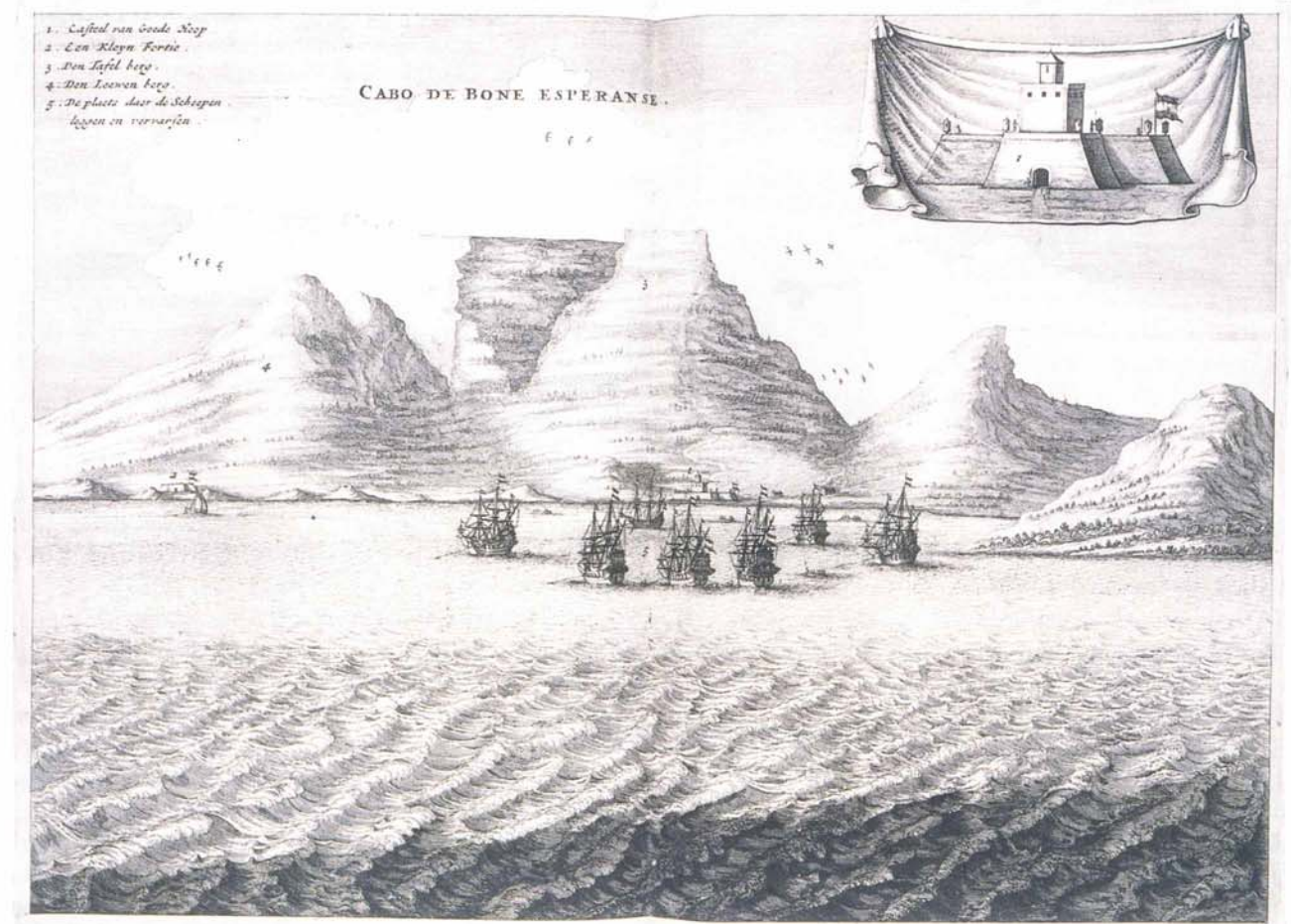
The almanac also includes the dates of departure and arrival of ships from India, Qalhat, Hormuz, al-Shihr, Mogadishu and Egypt. This flagging of dates significant to both farmers and mariners shows how the prosperity of the Rasulid dynasty was based on both agriculture and trade.

The entries in the almanac reveal a highly synchronized system of regular shipping among Aden, East Africa and Egypt. The end of the southwest monsoon came with the spring equinox, on Day 65; the entry for Day 68 (March 16) reads, "End of sailing of Indian ships from India to Aden; no one ventures out after this day." On Day 100 (April 15), the last fleet from India was scheduled to arrive; the arrival of the first ships of the convoy from Egypt, the *karim*, was timed to coincide with this. The last ships from Egypt arrived on Day 220 (August 14). Six days later, ships from Sri Lanka and Coromandel set out on their voyages home. The last sailing out of Aden on the India run during the northeast monsoon was on Day 250 (September 13). And in addition to these major convoys, there were the ships from the Gulf and East Africa—interregional trade that was also tied in with the oceangoing merchant convoys.





Kâtib Çelebi's *Cihannuma* (Universal Geography), published in 1732, included this illustration (above) of a compass and a sundial. The two instruments may have been combined, as in the 16th-century Chinese device at left, which was used in the practice of *feng shui*, and may resemble instruments used by Zheng He's navigators. Below, the earliest surviving Portuguese mariner's compass, made in 1711 by Jose de Costa Miranda.



Traditionally, the Mediterranean wind rose had 16 parts, but with the compass this developed into a 32-part rose, allowing, for the first time, very precise courses to be laid. It also made it possible to draw up the accurate marine charts known as *portulans*.

An indication of the esteem in which Ahmad ibn Majid was held in his day is that Arâb tradition actually ascribes the invention of the compass to him. What he may in fact have done is introduce the housed standing compass affixed to its card.

So by Ahmad ibn Majid's time, technology and economic expansion joined to mark a definitive break with the era before the compass and the axial rudder. Times were changing in other ways too. The foundation of Malacca, the Chinese voyages and the rapid growth of Islamic

powers in northern India, Indonesia and the Philippines were all creating new poles of attraction in the East. Small Islamic principalities were springing up in Malaya, Java and Sumatra, and

their only links to the Islamic heartland were by sea. Islamic space was expanding eastward, and with it the frontiers of the Islamic economy. Ahmad ibn Majid's publication of the secrets of Indian

Ocean navigation can be seen as one response to this expansion.

Vasco da Gama's epochal voyage around the Cape of Good Hope in 1498 has often been presented as the irruption of a dynamic, technologically advanced western power into an essentially static and backward Asia. Yet the Mediterranean and Indian Ocean worlds in the late 15th century were both responding to common historical

Sent to explore the African coast south of the Congo River, Bartolomeu Dias rounded the Cape of Good Hope in 1487 without sighting it. He did sight it—and named it the Cape of Storms—on his return voyage. Though not Africa's southernmost point, the cape, where two powerful, swift-moving currents clash, was a formidable obstacle on the sea route to the East. The Dutch established a colony there in 1652; their ships can be seen in this print from 1668.

forces. When Vasco da Gama's ship landed in Calicut in 1499 and the two worlds met, it was the visitors from the West who were at an economic and cultural disadvantage, only partially offset by their superior weapons. The Zamorin of Calicut, when showed the gifts brought by the Portuguese—the little bells and beads and the rough cloth—concluded that the Portuguese came from a poor and backward country, and advised them that, next time, they should bring gold. This they did—but even that came not from Portugal but from Africa. ☉



# The Coming of the Portuguese

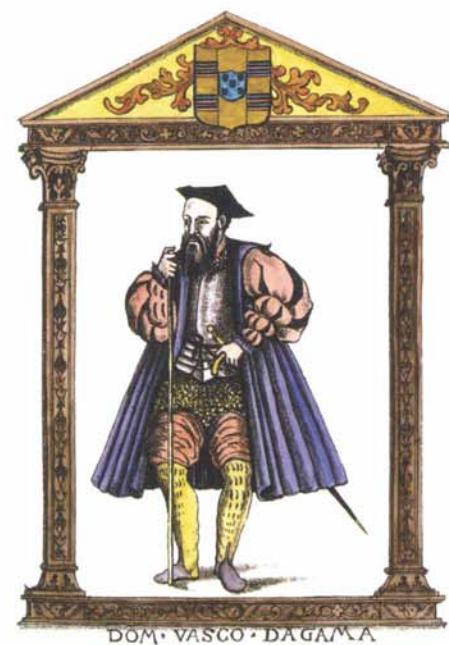


In 1500, the year Ahmad ibn Majid wrote his last poem on navigation and the Portuguese navigator Pedro Álvares Cabral touched four continents, the balsam trees of Matariyyah, just outside Cairo, inexplicably withered away.

The Coptic Christians said they had been planted by Mary during her sojourn in Egypt. The Mamluk chronicler Ibn Iyas wrote that "Europeans from many different countries used to come to obtain the oil of the balsam tree, and paid fantastic prices for it.... So the species disappeared...as if it had never existed, and this was an extraordinary thing, for it had been one of the most famous plants of the region since remote antiquity."

The little balsam garden symbolized the traditional commercial relationship between Islam and Christendom, a relationship that was changed forever by the voyages of Vasco da Gama and Cabral. It was a relationship that had always been carried out on Muslim terms. Here was a commodity of legendary rarity, produced only in this one place, to which miraculous curative powers were ascribed. Production was severely limited: Planting, collection and processing of the balsam were carried out by Coptic monks under the aegis of the Islamic state. The balsam was sold only to favored trading partners such as the Venetians, whose presence in Islamic ports was strictly governed by treaty. For Ibn Iyas, the ominous withering of the balsam trees meant the end of a familiar world.

When Vasco da Gama set out from Lisbon in 1498, the Mamluks of Egypt and Syria dominated the Middle East. They controlled the key Mediterranean ports of Alexandria, Beirut and Tripoli as well as all of the Red Sea and the overland routes to Makkah. The spices of India and the East Indies reached Venice through Mamluk territory, and taxes on the trade provided a significant part of Mamluk revenues. For more than 200 years the Venetians and the Mamluks had



A 19th-century portrait of Vasco da Gama, who may have spent his 30th birthday on his epoch-making voyage around Africa to Goa.

maintained diplomatic and commercial relations, and their prosperity was interdependent. The Portuguese intrusion into the Indian Ocean was a direct blow to the commercial interests of Venice, and the Venetians did everything they could to encourage the Mamluks to repel the Portuguese.

Yet the Mamluk regime was on its last legs. A new power had risen in the Middle East: the Ottoman Turks. In 1453 they conquered the Byzantine capital of Constantinople, putting an end to the last Christian power in Asia. The Ottoman sultan Selim the Grim took Mamluk Syria in 1516, and the following year decimated the Mamluk cavalry of Egypt—which refused to use firearms—with cannon and arquebuses. The age of the gunpowder empires had dawned.

With victory came mastery of the Red Sea and the trade with the East. The Ottomans inherited the custodianship of the Holy Cities of Makkah and Madinah and the pilgrimage routes. This meant protecting Red Sea shipping from the Portuguese.

When Cabral returned to Lisbon on July 31, 1501, with a cargo of spices and a shipload of gold from Sofala, the Venetians were filled with dismay. "This," says a Venetian chronicler, "was considered very bad news for Venice.... Truly the Venetian merchants are in a bad way."

The Mamluks in Egypt were just as worried. In 1498, the year Vasco da Gama set out for India, so much pepper was available in the markets of Alexandria that the Venetians could not raise enough money to buy it all. In 1502, four years later, there was not enough pepper to load their ships. They were forced to reduce the number of galleys in their merchant fleet

from 13 to three, and instead of sending two annual mude to Alexandria thereafter, as had become the custom in the 15th century, Venice sent only one fleet every two years.

The interests of the Venetians and the Mamluks thus coincided. Venetian embassies to Cairo urged military action, and promised arms and men. The Mamluk sultan Qansuh al-Ghawri began to construct a fleet of 12 ships at Suez, using timber imported from the Mediterranean. The ships were manned largely by sailors from the North African coast, along with some Venetian mercenaries. While the fleet was being constructed, emissaries arrived from Malik Ayaz, the governor of the Gujarati port of Diu, promising further military aid against the common enemy.

Constructing and manning a fleet to sail from Suez to India was a long, expensive and laborious task. While it was under way, the Portuguese were carrying out a concerted naval strategy aimed at capturing—by force or by treaty—the major Indian Ocean ports with the goal of shattering the Muslim monopoly of the carrying trade in the western Indian Ocean.

In 1500 the Portuguese crown had sent its second expedition to India, captained by Cabral. He was accompanied by Bartolomeu Dias, the explorer who first sailed around the Cape of Good Hope in 1487. The 13 ships were well armed, for Vasco da Gama's report on his reception in Calicut had convinced the crown that the Indian Ocean trading network could only be penetrated by force. But not much force, because da Gama had also reported an extraordinary fact: Indian Ocean merchant shipping was unarmed.

Not so in the Mediterranean, where commerce and coercion had always gone hand in hand. The Italian merchant republics of Genoa and Venice waged their commercial wars at sea; Catalans, Majorcans, Maltese, Spaniards and French competed for markets and maritime routes by force of arms.

THE OMINOUS WITHERING OF THE BALSAM TREES OF MATARIYYAH FORESHADOWED THE END OF AN ERA IN WHICH TRADE WAS CARRIED OUT ON THE MUSLIMS' TERMS.

By the middle of the 15th century, cannon were mounted on the great Venetian galleys, and other powers followed suit. Ships with superstructures strong enough to bear cannon were constructed, resulting in the galleons, the floating fortresses of the 16th century.

By later standards, the Portuguese ships that rounded the Cape of Good Hope were lightly armed. Their cannon barrels were forged of iron rods, capable only of firing stones weighing fractions of a kilogram a couple hundred meters. They nevertheless proved effective against the unarmed shipping of the Indian Ocean. Although it is unlikely that Cabral's two-day bombardment of Calicut caused much actual damage, the psychological effect was enormous.

The Portuguese also quickly took advantage of local rivalries. Although unable to establish a warehouse in Calicut, Cabral found rivals of Calicut at Cochin and Cananore who were prepared to deal with the Portuguese.

The third Portuguese expedition, in 1502, was composed of 14 ships, again commanded by Vasco da Gama. He stopped at Kilwa on the East African coast, where he levied a yearly tribute of 1500 ounces of gold from the sultan. When he reached Calicut, he too bombarded the port, in retaliation for the killing of the Portuguese traders he had stationed there on his first voyage. The Muslims of the Malabar coast mounted a fleet against him, but they were defeated by the Portuguese cannon. It was on this trip that da Gama sank a pilgrim ship, the *Meri*, drowning all 300 passengers.

Lisbon was neither large nor prosperous when the Portuguese began their 80-year push around Africa, yet by the time this engraving was made in 1572, it had grown wealthy on its new monopoly of Europe's route around the Cape of Good Hope to the Indian Ocean.

BRAUN AND HOGENBERG, CIVITATES ORBIS TERRARUM, 1572 (DETAIL)



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He returned to Lisbon with a large cargo of spices from Cochin, and King Manuel made the decision to establish a permanent naval presence in the Indian Ocean in order to gain complete control of the spice trade. He took the grandiloquent title "Lord of the Conquest, Navigation and Commerce of Ethiopia, Arabia, Persia and India." In fact, Ethiopia, Arabia, Persia and India were never conquered, and the Portuguese never fully succeeded in monopolizing the commerce of the Indian Ocean. What they did monopolize, for almost 100 years, was the Cape route to India.

In 1505, Francisco de Almeida, appointed viceroy with a tenure of three years, was sent with 21 ships to establish fortresses at key locations and above all to deny Muslim shipping access to the Red Sea, so that "they are not able to carry any spices to the territory of the [Mamluk] sultan and everyone in India would lose the illusion of being able to trade with anyone but us."

Almeida had fought at the siege of Granada that ended in 1492, and he brought with him to the Indian Ocean the uncompromising attitudes of the Christian *reconquista*. He sacked Kilwa, which had four stone-throwing catapults for its defense, and deposed the sultan in favor of another more amenable to the Portuguese. Further up the coast, Mombasa had some 3700 men of military age and cannon that fired on the Portuguese as they entered the port. The Portuguese, in return, bombarded the town. A Spanish convert to Islam came out and told the Portuguese to leave, that the people of Mombasa were braver than those of Kilwa. That night, Almeida put the town to the torch and in the morning sacked it, killing some 1500 people and taking great quantities of cotton cloth, silk and gold-embroidered textiles as well as valuable carpets. The king of Mombasa wrote to the king of Malindi to warn him of what might befall him: "This is to inform you that a great lord has passed through the town, burning it and laying it waste. He came to the town in such strength and was of such cruelty, that he spared neither man nor woman, old nor young—nay, not even the smallest child.... Nor can I ascertain nor estimate what wealth they have taken

Alfonso de Albuquerque understood that Portugal could not compete on equal terms with the established Indian Ocean traders because there was no market for European exports: The only way to tip the scale was to use force, and he led the Portuguese conquests of Goa, Malacca and Hormuz, as well as persistent but unsuccessful attacks on Aden.



Vasco da Gama's ship, under full sail and with a following wind, was illustrated in the *Libro das Armadas* in 1497.

from the town. I give you this news for your own safety."

The new Mamluk fleet built at Suez set out for India in 1507, first fortifying Jiddah and Suakin against a possible Portuguese attack. It put in at Aden, where it received support from the Tahirid sultan, and then, in 1508, crossed the Indian Ocean to the Gujarati port of Diu. There it was joined by local ships supplied by Malik Ayaz, and although the soldiers in the contingent did not have firearms, the combined fleets nonetheless carried out a successful surprise attack on

the Portuguese in Chaul. Almeida's son was killed and the Portuguese routed. In 1509, however, the Portuguese fleet, led by Almeida, defeated the Mamluks off Diu, and another fleet would not be sent against the Portuguese until 1538, this time by the Ottoman Turks.

Thus Almeida had demonstrated Portuguese sea power again—but no secure naval base had yet been obtained. This task fell to Alfonso de Albuquerque, the true architect of Portuguese naval strategy in the Indian Ocean. Succeeding Almeida in 1509, he quickly realized that the Portuguese could not compete on equal terms with long-established Muslim merchants, for there was no market for European exports, and Portugal did not have the liquidity to supply gold and silver on a sufficiently large scale. Albuquerque saw that the only way to protect Portuguese trade in the face of the growing opposition of Indian Ocean principalities and Muslim merchants was to establish a permanent military and naval presence in the region, and this could only be done by securing a permanent naval base. Only then could the key ports be taken, fortified and garrisoned and a monopoly of the maritime trade secured.

As that base, Albuquerque chose Goa, a port on the Malabar coast in the territory of the Sultan of Bijapur, Yusuf Adil Shah. It had a good harbor and was also a center of shipbuilding. The sultan imported horses from Arabia for, like all the inland sultanates, he maintained his power against rivals with cavalry. Control of the horse trade could be used as a weapon. Albuquerque formed an alliance with a Maratha warlord named Timoyya, and together they took the city in 1510. Goa would remain the capital of the Portuguese seaborne empire, the *Estado da India*, until 1961, when the Indian army occupied it and put an end to four and a half centuries of Portuguese rule.



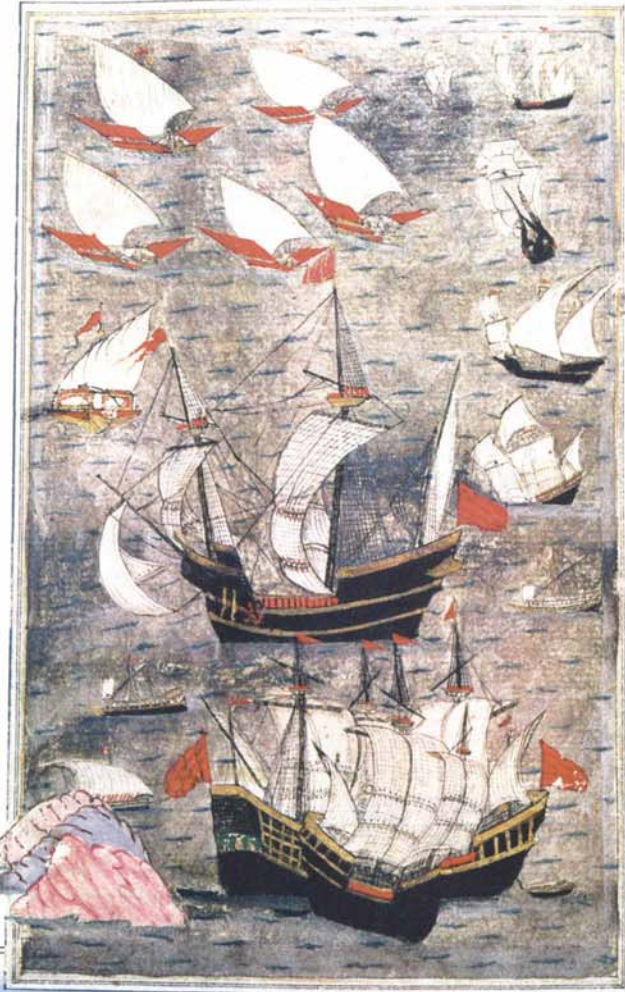
Albuquerque saw that there were three key emporia in the Indian Ocean: Malacca, Aden and Hormuz, each on a narrow strait controlling access to a major trade route. Malacca was the gateway to the Bay of Bengal, the Spice Islands (the Moluccas) and China. Aden was the gateway to Egypt, North Africa and the Mediterranean. Hormuz controlled access to the Gulf and the overland trade to Iran, Central Asia and the Middle Eastern heartlands.

"Whoever is lord of Malacca has his hand on the throat of Venice," wrote Tomé Pires, who served at both Goa and Malacca. It was true: Malacca was the collecting point for the spices from the Moluccas, the silks and porcelains of China and all the other rarities that had traditionally been available to Europe only from the hands of Venetian merchants.

In 1511, Albuquerque took the port with a fleet of 16 ships and a force of 700 Portuguese and 300 Malabarais, defeating a Malaccan army of 4000. The ruler fled south to Johor, where together with other refugees he formed a rival state. Albuquerque expelled Gujarati, Bengali and Muslim Tamil merchants from the city. Some made their way to Aceh, which quickly became a center of resistance to the Portuguese. Supplied with cannon by the Ottoman Turks, they built up a navy that shipped Sumatran pepper to the Red Sea by running Portuguese blockades.

In 1513, two years after taking Malacca, Albuquerque laid siege to Aden. He knew that the Mamluks were preparing a second fleet at Suez, and he wanted to strike before Aden received reinforcements. Unlike Malacca, Aden was well-fortified, with high walls and determined defenders who were perfectly aware that not only their livelihoods were at stake, but the security of the Holy Cities and the pilgrimage routes as well. Albuquerque had brought siege ladders wide enough to take six men abreast, but at the battlements they either broke under the weight of the attackers or were pushed off the walls. After a savage battle from dawn to midday, the Portuguese were forced to

A Turkish sketch from the 16th century shows the Ottoman fleet, which protected Aden and Jiddah from the Portuguese. By the 1560's, more spices reached Jiddah than Lisbon.



withdraw. Albuquerque and the survivors of the siege took refuge on the Kamaran Islands, inside the Bab al-Mandab. For a time they harried Red Sea shipping, but sickness among the men finally forced Albuquerque to withdraw.

Despite repeated attempts, the Portuguese never succeeded in taking Aden, and their failure meant that Portuguese control of Indian Ocean trade was only partial. Although they sent annual fleets to blockade the Bab al-Mandab, they could

THE PORTUGUESE WERE AMAZED TO LEARN THAT INDIAN OCEAN TRADERS TRAVELED UNARMED. IN THE MEDITERRANEAN, COMMERCE AND COERCION HAD LONG GONE HAND IN HAND.

not prevent Gujarati ships carrying Sumatran pepper from Aceh from breaking through to Jiddah. By 1545, pepper was once again beginning to arrive in Alexandria, and by 1560, Alexandria was supplying Venice with as much pepper and spices as it had before the discovery of the Cape route to India.

The third key emporium on Albuquerque's list was Hormuz, which he succeeded in taking with six ships in 1514. Until the joint forces of Shah Abbas and the British East India Company recaptured it in 1622, this

port—located on a barren island with no water or wood of its own—was one of the richest cities in the world. The Arab dynasty that Albuquerque defeated continued to rule it as Portuguese vassals.

Jacques de Coutre, a Flemish merchant and soldier serving with the Portuguese, described Hormuz in 1606: "At the trading season during the monsoons, more than 200 large ships come filled with merchandise. Some are loaded with cinnamon from Ceylon, others from Cochin with cloth from Bengal and Coromandel and cloves, nutmeg, mace, sugar and other goods that come from south of Cochin. Other ships come from Makkah and Aden to buy; still others come from Mangalore and Barcelore, loaded with rice." He lists dozens of goods and trading partners and estimates that the customs duties levied on all this merchandise came to some 100,000 *cruzados* a year. He also describes the large number of boats that came to Hormuz from the ports of the Arabian coast: Suhar, Julfar, Dubai, Bahrain and al-Qatif.

De Coutre estimates that merchants who traded in Hormuz twice a year made profits of 40 to 50 percent. This sounds a reasonable rate





Albuquerque's armada bombards Goa, an event that actually happened the year after the date on this engraving. The impediments in the channel (foreground) may have been defenses against his ships. Goa's shipyards can be seen to the right of the town, enclosed by a wall that runs down into the channel.

left unable to trade directly with China, although smuggling was rife.

Until the beginning of the 16th century, Japan had imported silver. Then, in 1526, the rich mines of Iwamiginzan were discovered. During the 16th and 17th centuries, they produced an average of 32,000 to 40,000 kilograms of silver per year (1 to 1.2 million troy ounces), making Japan the second-largest silver producer in the world.

A country with a surplus of silver that was unable to trade with its closest neighbor could not long escape the attention of the Portuguese. They first made contact with Japan by accident in 1543, when a ship blown off course landed on the island of Tanegashima, today the home of the Japanese space program. The local ruler, Tanegashima Tokitaka, bought two arquebuses from the castaways and had them copied, and in 1575 they were used against the Takeda samurai by Oda Nobunaga with devastating effect. This too is an aspect of early "globalization."

In the event, it was the Portuguese who mediated in the trade between China and Japan. They did this from Macao, not far downstream from Canton, where in 1556 they were granted permission to establish a trading "factory."

Their acceptance by the Chinese was slow. Indeed, it had been widely believed in the Chinese ports that the Portuguese were cannibals. When the first Portuguese ship put in at

Canton in 1513, the Chinese authorities regarded the trade goods aboard with disdain. But with the grant of Macao, the Portuguese were able to greatly extend the geographical and commercial scope of the *Estado da India*. They brought silver, ivory, ebony and sandalwood from Goa and Malacca to Macao, took Chinese silks and other goods to Nagasaki in exchange for silver, exchanged the silver for gold with Chinese merchants in Macao, and returned to Malacca and Goa with gold, silk, camphor, copper, mercury and porcelain, all in great demand in the Indian Ocean trading network. This trade was especially lucrative

because the value of silver was greater in China than in Japan. In 1567, the Chinese, eager for silver, relaxed the ban on maritime trade, although foreign ships were only allowed to visit a few designated ports.

In 1564, the Spanish admiral Miguel López de Legazpi sailed from Acapulco and occupied Cebu in the Philippines.



This detail from a folding *namban jin* ("southern barbarian screen") shows Portuguese traders landing in Japan. Though they found Japan by accident, they did so just as Japan had discovered vast deposits of silver and was eager to trade.

rediscovery of the mercury amalgamation method of silver refining. First used by the Arabs in the 12th century in North Africa, it allowed much greater quantities of silver to be obtained from the ore. By another remarkable stroke of luck, a major deposit of cinnabar—mercury ore—was discovered in 1563 at Huancavalica in Peru. Silver could now be refined in Peru without having to import mercury from Spain.

A river of silver from Potosí and Zacatecas flooded the world. The *real de a ocho*, the Spanish "piece of eight," became an international currency that fueled the world economy for more than two centuries. This badly stamped, unmilled coin flooded the economies of the East. Although its abundance inflated prices, the inflation was offset by the fact that silver increased in value the further east it traveled, just as pepper did voyaging west: The Venetians estimated that silver gained 30 percent over its European purchasing power simply by traveling to the Levant. The relative scarcity of silver that had afflicted medieval economies, hampering trade, was replaced by an apparently limitless supply. Then yet another unexpected source of silver was discovered: Japan.

The Ming dynasty of China, angered at the depredations of pirates off their southern coast, who they claimed were supported by the Japanese, outlawed trade with Japan—indeed all maritime trade—in 1480. Tokugawa Japan, which greatly valued Chinese silks and manufactured goods, was

further revenues by selling concessions for specific maritime trade routes to Asian shipowners. By the mid-16th century Asian merchants were shipping their goods on Portuguese ships and vice versa. And even the Portuguese ships were crewed by men from Arabia, Malabar, Gujarat, Malaysia and Indonesia, with perhaps one or two Portuguese officers. Pidgin Portuguese became the *lingua franca* of the Indian Ocean ports.

In 1538 the Ottomans sent a huge fleet of 100 ships and 20,000 men down the Red Sea. They occupied Aden and captured a number of Portuguese ships. This Ottoman occupation prevented the Portuguese from threatening either Aden or Jiddah any further, and, by the 1560's, more spices, largely conveyed in ships from Aceh, were reaching Jiddah than were reaching Lisbon.

By the end of the 16th century, the Portuguese had abandoned any attempt to establish a monopoly of trans-Indian Ocean trade, contenting themselves with their control of the sea route to Europe. Many private Portuguese traders operated on equal terms with their Asian partners and competitors, fully assimilated to the constraints of the Indian Ocean trading network.

While the Portuguese were establishing their *Estado da India* in the Indian Ocean, Cortez and Pizarro were conquering the Aztec and Inca empires. They looted gold almost beyond the dreams of avarice, and it was dissipated almost as quickly as it had been found. Then something extraordinary, almost miraculous, happened. In 1545, in the mountains of what is now Bolivia, in one of the most desolate places on the planet, a mountain of silver was discovered, the *cerro* of Potosí. The following year, in Mexico, Juan de Tolosa discovered the great silver mines of Zacatecas. The discovery of these vast silver deposits in the New World coincided with the

BY THE END OF THE 16TH CENTURY, THE PORTUGUESE HAD ABANDONED ANY ATTEMPT TO ESTABLISH A MONOPOLY OF INDIAN OCEAN TRADE.

of return, but Portuguese profits on the pepper trade could run as high as 500 percent, and pepper was the principal commodity the Portuguese traded. During the first two decades of the *Estado da India*, 95 percent of the weight of the cargoes of the great carracks that arrived in Lisbon was pepper, which was valued not only as a condiment but also as a prophylactic against the plague and as an aphrodisiac. As time went on, however, the demand for pepper decreased, and more and more cargo space was devoted to textiles. By de Coutre's time, pepper had fallen to an average of 10 percent of the cargoes and textiles made up more than 60 percent. A fashion revolution had taken place in Europe; suddenly everyone wanted to wear comfortable, brightly colored cottons and silks and to decorate their houses with oriental tapestries, cushions, hangings and carpets.

De Coutre's vivid picture of a major entrepôt in which everything was available, from extremely valuable precious metals, textiles and spices to humbler but vital goods like nails and coir for shipbuilding, gives an idea of the amazing range of commodities and the extended trading networks of the major ports.

In all the ports controlled by the Portuguese, Albuquerque instituted the system of the *cartaz*, a trading licence authorizing a ship to carry cargo. Ships without a cartaz, which of course had to be purchased from the Portuguese port authorities, were fair game. This simple protection racket, plus customs duties and some outright piracy, raised the money to defray part of the cost of manning garrisons and maintaining the navy—as well as purchasing cotton textiles to trade for spices in the Moluccas and for gold and ivory in East Africa. The cartaz system enabled the Portuguese to exercise some control over trading networks that they could not dominate. In time, they raised

UPPER: BRAUN AND HOGENBERG, CIVITATES ORBIS TERRARUM, 1572; LOWER: MUSEU CALOUSTE GULBENKIAN / WERNER FORMAN / ART RESOURCE



# Events & Exhibitions

**Caravan Kingdoms:** Yemen and the Ancient Incense Trade. From around 800 BC to the year 600 of our era, the kingdoms of Qataban, Saba (biblical Sheba) and Himyar grew fabulously wealthy from their control over the caravan routes of the southern Arabian Peninsula and, in particular, from the international trade in frankincense and myrrh. Excavations at the capitals of these ancient kingdoms have yielded spectacular examples of architecture, distinctive stone funerary sculpture, elaborate inscriptions on stone,



bronze and wood, and sophisticated metalwork. This exhibition of approximately 130 objects explores the unique cultural traditions of these ancient kingdoms, with special emphasis on their rich artistic interaction with the eastern Mediterranean, northeastern Africa, and South and Southwest Asia. Only North American venue. Sackler Gallery, Washington, D.C., through September 10.

**Part of an alabaster ibex frieze, 39 centimeters high and dating from the fifth century BC, was found at Marib, capital of the kingdom of Saba. From the early seventh century BC till the fourth century of our era, Saba dominated a wide area of southern Arabia. The incense burner, from the third century after Christ, was carved at Shabwa, capital of the kingdom of Hadhramawt and an important religious and trading center.**



**Islamic Art From the Madina Collection** presents some 200 works from what was widely regarded as one of the most significant private collections of Islamic art, donated to the Museum in 2002. Assembled by Dr. Maan Madina during his career teaching Arabic and Islamic studies at Columbia University, and comprising more than 700 objects, the collection is especially rich in ceramics, glass, wood, stone, textiles and metalwork from Egypt, Syria, Iraq, Turkey and Iran, as well as calligraphy. In addition, the collection includes some “lost” objects: For example, the whereabouts of a spectacular pair of large glazed ceramic ewers—the only known examples from Timurid Iran—had been unknown since their display at the Islamic exhibition at Munich in 1910. Los Angeles County Museum of Art, through July.

**Iraq and China:** Ceramics, Trade and Innovation focuses on revolutionary changes that took place in Iraqi ceramics during the ninth century as the humble character of Islamic pottery responded to a wave of luxury Chinese goods. During this period, Iraq became a center for Islamic ceramic production as new technologies transformed common earthenware into a vehicle for complex multi-colored designs. Following the disintegration of the Abbasid Empire after the 10th century, migrating Iraqi potters transmitted these techniques to Egypt and Iran, whence they traveled to Europe, giving rise to the great “majolica” tradition in medieval Spain and Renaissance Italy. In China, 14th-century experiments with cobalt blue from the Islamic world led to Yuan and Ming blue-and-white, which in turn influenced such European production as Delft, Royal Copenhagen and English blue-and-white. Sackler Gallery, Washington, D.C., through July 17.

**Farid Belkahlia**, one of the founders of contemporary art in Morocco, presents

his most recent work: twelve large, circular maps of the world as it never was, more than 150 centimeters (60") across, painted on cowhide whose natural coloration defines the continents. The “continental drift” he depicts overthrows the usual artistic and geographical orientations. Institut du Monde Arabe, Paris, through July 17.

**Ziad Dalloul's** colors are earthy, dark and crusty—the colors he remembers from his childhood in Syria and his years in Algeria, the colors that have enabled him to undertake the spiritual discipline of trying to renew past tradition by present-day questioning. This exhibition presents oils, engravings and drawings, and demonstrates the unity and uniqueness of the vision that produced them. Institut du Monde Arabe, Paris, through July 17.

**Views From Africa** brings to life the 500-year-old story of African encounters with Europe. From masks to salt cellars, the objects reveal different aspects of European relations with Africa—as perceived by Africans. While some were produced specifically for sale to Europeans, others were made for use in a number of contexts by African communities. Through the challenges of trade, religion, war and independence, the exhibition reflects not only Africans’ personal experiences but also a dynamic social engagement with change. British Museum, London, through July 24.

**In the Realm of Princes:** The Arts of the Book in Fifteenth-Century Iran and Central Asia. In 1370, the Turkic warlord Timur, known as Tamerlane in the West, conquered a vast territory that extended from Anatolia to the borders of China. He chose Samarkand as his capital and established the Timurid Dynasty, whose rule ushered in one of the most artistically brilliant periods in the history of the Islamic world. The exhibition includes some 30 individual objects from the Timurid period, ranging from monumental Qur’an folios and

delicately painted manuscript illustrations to an exquisitely carved agate cup and a finely tooled wooden door. They illustrate how Timurid patrons fostered the development of a distinct, highly refined artistic language that bolstered their religious and secular authority and affirmed their role as the rightful heirs of the Persian political, cultural and artistic tradition. The exhibition also includes four rare paintings by the legendary late 15th-century artist Bihzad, never before seen together. Sackler Gallery, Washington, D.C., through August 7.

**Mummy:** The Inside Story uses cutting-edge computer graphics and the latest scientific and medical research to allow visitors to view a “virtual unwrapping” and autopsy of the 2800-year-old mummy of Nesperunnub, priest of Karnak in Egypt. Visitors sit in a state-of-the-art immersive theater where, wearing 3-D glasses, they can scrutinize the mummy’s body and objects inside the wrappings. British Museum, London, through August 14.

**Making of the Master:** The Art of Arabic Calligraphy highlights a living tradition, as it is taught today by Turkish *battat* Hasan Çelebi, and the training needed to achieve proficiency in the art. British Museum, London, through September 4.

**Earthenware From Antiquity** focuses on the birth and development of the technology of making jewelry, amulets, small statuary, vessels and decoration of glazed and unglazed clay, exhibiting works from Egypt, the Middle East and the Greek and Roman worlds. Beginning in the fourth millennium BC, the technology advanced rapidly in the second, with the use of glass, multiple colors and incrustation, and in the first, when pierced work, relief, vitreous bodies and intense colors appeared. Musée du Louvre, Paris, through September 12.

**Genghis Khan and His Heirs:** The World Empire of the Mongols presents archaeo-

logical artifacts, old maps, manuscripts and miniatures that exemplify the cultural achievements of the Mongol Empire, founded 800 years ago. The apogee of a long series of states established by nomads in the steppes of Eurasia, Genghis Khan’s empire stretched from the Pacific Ocean to Central Europe and was as efficiently administered as it had been brilliantly and brutally conquered. An effective bureaucracy, a postal system, the use of paper money and broad religious and cultural tolerance were at the foundations of the *Pax Mongolica*; under it, trade in goods and ideas between Europe and Central Asia blossomed until into the 16th century. Kunst- und Ausstellungshalle, Bonn, Germany, through September 25.

**Petra:** Lost City of Stone, a traveling exhibition, features extraordinary art and artifacts from the red sandstone cliff city in southern Jordan. Petra was a major crossroads of international trade routes from the first century BC to the second century of our era, when it was governed by the Nabataeans, who were renowned for their skills in trade, agriculture, engineering and architectural stone carving. The exhibition presents some 200 objects, including stone sculptures and reliefs, ceramics, metalwork and ancient inscriptions, and a selection of 19th-century artworks documenting the European rediscovery of Petra. Calvin College, Grand Rapids, Michigan, through August 15; Glenbow Museum, Calgary, Alberta, opens October 29.

**10,000 Years of Art and Culture From Jordan:** Faces of the East presents archaeological evidence of the various cultures of the region from the Early Neolithic (eighth millennium BC) to the early years of Islam in the eighth century of our era—a time span during which fundamental developments in the history of civilization took place, as well as events that shaped western culture. Archeological discoveries of the last 15 years have

considerably changed our view of the region’s history, and now more than 700 superb objects, lent by Jordanian museums, illuminate the great eras and the turning points of important cultures. Kunst- und Ausstellungshalle, Bonn, Germany, through August 21.

**Africa Garden** by Ground Force has been designed as a walk through the continent’s three climatic sections: desert, tropical and temperate. Visitors to the garden will be able to make connections among the plant life, its native cultures and the African objects inside the British Museum. London, through September 4.

**Palace and Mosque:** Islamic Art from the Victoria and Albert Museum includes over 100 of the V&A’s finest masterpieces. The exhibition highlights recurrent themes in the development of Islamic art from the eighth to the 19th century: the key role of Arabic script and calligraphy; the poetic background of much secular iconography; variation in the use of images in different regions and periods; the development of mathematics and science in the service of religion and in the creation of elaborate geometric designs; the central role of Islam; dynastic patronage in courtly art; artistic interaction with other cultures; and the prestige of Islamic art in medieval and early modern Europe. Kimbell Art Museum, Fort Worth, Texas, through September 4.

**The Earthenware of Antiquity:** Egypt, the Near East, Greece continues the museum’s investigation of artistic techniques, begun with the “Ivories” exhibition, with an examination of the arts of fired earthenware. Using objects from the museum’s own collections, the exhibition describes different techniques of creation and the uses of the objects produced. Musée du Louvre, Paris, through September 12.

**Textiles for This World and Beyond:** Treasures from Insular Southeast Asia explores the important role that textiles in Indonesia and Malaysia play in daily society, their part in many old beliefs and customs still followed today and their use in ceremonies to maintain harmonious relationships with the deceased or the gods. On display are more than 60 Southeast Asian textiles dating from the 19th to the early 20th century, many never before exhibited. Catalog. Textile Museum, Washington, D.C., through September 18.

**Matisse, His Art and His Textiles:** The Fabric of Dreams presents some 45 paintings, drawings, prints and painted-paper cutouts that attest to Henri Matisse’s lifelong interest in textiles, including works from the 1910’s and 1920’s demonstrating the influence on him of North African fabrics and screens. Metropolitan Museum of Art, New York, through September 25.

**Voices of Southeast Asia** combines four unique exhibits to create a celebration of Southeast Asian culture. One presents masks, textiles, ceramics and photographs from Vietnam; in the second, the museum’s own permanent Asian collection shows more than 80 world-class sculptures, including rare

pieces from Cambodia, China and Thailand that illuminate religions and mythologies. The personal stories of immigrants who left their homelands in Southeast Asia to begin new lives in Canada make up the third exhibit; the fourth presents works of contemporary first-generation Asian-Canadian artists. Glenbow Museum, Calgary, Alberta, through September 25.

**This Fertile Land:** Signs + Symbols in the Early Arts of Iran and Iraq explores late prehistory at about 4000 BC—the pivotal moment just before the development of writing. Imagery on seals and painted pottery used what we must regard as a type of visual language to communicate about wealth and abundance, ritual and magic, health, fertility and sexuality. The exhibition features a remarkable collection of stamp seals, seal impressions and painted vessels. Kelsey Museum of Archaeology, Ann Arbor, Michigan, through September 30.

**Carved for Immortality.** In ancient Egypt, brightly painted carved wooden figures of the deceased were placed in special chambers or niches in tombs to represent the person at different stages of his or her life. In some cases, additional carvings represented family members and servants. Because the wood used was often soft sycamore fig (*Ficus sycamorus*)—appropriate in that twin sycamores were believed to stand at the eastern gate of heaven, from which the sun god Re emerged each morning—relatively few of these statues have survived from ancient times. Walters Art Museum, Baltimore, through October 2.

**Paisley and Peacocks:** Woven and Embroidered Textiles from Kashmir and North India brings together two very different but equally striking traditional textiles from the Indian subcontinent, both rapidly disappearing: Kashmiri shawls, woven at the foot of the Himalayas from the finest and softest wools in intricate paisley patterns; and boldly embroidered women’s head coverings from rural villages in north India. Kashmiri shawls are treasured for their beautiful patterns, warmth, and lightness. By contrast, the village textiles of Hiranya Pradesh and the Punjab are made of rough homespun wool. Long unknown in the West, tribal textiles are rapidly gaining international attention for bold colors and designs. University of Michigan Museum of Art, Ann Arbor, through October 16.

**Teaching About the Arab World and Islam** is the theme of teacher workshops co-sponsored by the Middle East Policy Council in Washington, D.C., and conducted by Arab World and Islamic Resources and School Services (AWAIR) of Berkeley, California. The program is fully funded and workshops may be requested by any school, district, office of education or university. ① www.awair@igc.org, www.mepe.org or www.awaironline.org; 510-704-0517. Sites and dates currently scheduled include: Cambridge, Massachusetts, July 27–28; Las Vegas, Nevada, September 22–24; Jordan, Utah, October 1 and 8; Birmingham, Alabama, October 13–14; Concord, New Hampshire,

November 4 and December 9; Niagara Falls, New York, November 8–9; Louisville, Kentucky, November 17–18.

**Threads of Tradition:** Palestinian Bridal Costumes highlights magnificent embroidery and colorful dresses from the late 19th and early 20th century in the Munayyer Collection. Other *objets d’art*, such as brass oil lamps, inlaid wooden tables and tapestries, complement the dresses. Embroidery patterns, some dating back to pre-Islamic and pre-Christian times, became incorporated into the rich designs and brilliant colors that identify the specific village or town where the dress was made. The collection, one of the most extensive in America, is presented by the Palestinian Heritage Foundation. Antiochian Heritage Museum, Ligonier, Pennsylvania, through November 19.

**Tutankhamun and the Golden Age of the Pharaohs** includes 130 works from the Egyptian National Museum and presents a selection of 50 spectacular objects excavated from the tomb of Tutankhamun, including one of the canopic coffinettes, inlaid with gold and precious stones, that contained his mummified internal organs. Additional pieces in the exhibition derive from the tombs of royalty and high officials of the 18th Dynasty, primarily from the Valley of the Kings. These additional works place the unique finds from the tomb of Tutankhamun into context and illustrate the wealth and development of Egyptian burial practice during the New Kingdom. The exhibition, more than twice the size of the 1979 “King Tut” exhibition, marks the first time treasures of Tutankhamun have visited America in 26 years. ① 323-857-6000, www.lacma.org. Los Angeles County Museum of Art, through November 15; Fort Lauderdale Museum of Art, from December 15.

**Morocco:** Art and Design 2005 presents a broad overview of the contemporary art climate in Morocco, displaying painting, photography and sculpture as well as industrial and fashion design by 21 artists, all of whom have strong reputations in Morocco, and in some cases also abroad. Wereldmuseum Rotterdam, through March 5, 2006.

**Mummies:** Death and the Afterlife in Ancient Egypt features 140 objects—including 14 mummies and/or coffins, the largest collection ever to leave British Museum—and illustrates the fascinating story of how Egyptians prepared and sent the dead into the afterlife. It covers embalming, coffins, sarcophagi, *shabti* figures, magic and ritual, amulets and papyri, and displays furnishings created specifically for an individual’s coffin, such as spectacular gold jewelry and a wooden boat to transport the dead into the underworld. Bowers Museum, Santa Ana, California, through April 15, 2007.

**Ancient Egyptian Art for the Afterlife** presents Predynastic (4000–3000 BC) ceramics and stone and Old Kingdom (3000–2100 BC) and Ptolemaic (200–300 BC) funerary sculpture, stela and coffin boards. The accompanying publication will place the works

in context, providing an overview of ancient Egyptian history and the purpose of funerary art. Mint Museum of Art, Charlotte, North Carolina, July 15 through December 4.

**Seminar for Arabian Studies** meets annually for the presentation of the latest academic research in the humanities on the Arabian Peninsula (including archeology, epigraphy, ethnography, language, history and art) from the earliest times to the present day or, in the case of political and social history, to the end of the Ottoman Empire in 1922. British Museum, London, July 21–23.

**Heartland Youth Seminar on Arabic Music** offers instruction for ages 8–15 from Karim Nagi Mohammed, Naser Musa and Alan Shavarsh Bardezbanian. ① www.xaen-music.com. DeKoven Center, Racine, Wisconsin, August 1–4.

**Ninth Annual Arabic Music Retreat:** Weeklong intensive classes focusing on Arab music theory, performance and history, led by Simon Shaheen and a faculty of musical masters. Recital by participants and faculty. Mount Holyoke College, South Hadley, MA, August 13–20.

**Woven Influences:** Islamic Costume and European Fashion highlights the West’s fascination with textiles and costumes from the Middle East and India, a continuing part of the history of European dress from the Renaissance to the present day. Walter Denny will lecture on the artistic traditions of the Ottoman Turks, on Islamic carpets and textiles and on issues of economics and patronage in Islamic art. He will highlight how Islamic fabrics have been incorporated into European ecclesiastical and royal costume since the Middle Ages. Textile Museum, Washington, D.C., August 20.

**Silver and Shawls:** India, Europe, and the Colonial Art Market highlights the evolution of shawls and silver tablewares produced during the colonial period in India, especially in the 18th and 19th centuries. The presentation hinges on two opposing stylistic developments: that shawl design evolved from traditional, Indian compositions and decoration to patterns that responded to European tastes, while Indian silver production grew from small studios of foreign artisans producing restrained, Georgian-styled objects into a larger industry employing local artists and incorporating “exotic” imagery. Sackler Museum, Cambridge, Massachusetts, August 27 through January 29.

**The Quest for Immortality:** Treasures of Ancient Egypt dramatically illustrates the ancient Egyptian concept of the afterlife through 143 magnificent objects and a life-sized reconstruction of the burial chamber of the New Kingdom pharaoh Thutmose III (1490–1436 BC). Ranging in date from the New Kingdom (1550–1069 BC) through the Late Period (664–332 BC), the works of art include luxurious objects that furnished tombs, including jewelry, painted reliefs, implements used in religious rituals, a sarcophagus richly painted with



This panel of the so-called "Miller Atlas," showing the Indian Ocean, was produced in 1519, soon after the expeditions of da Gama, Cabral and Albuquerque.

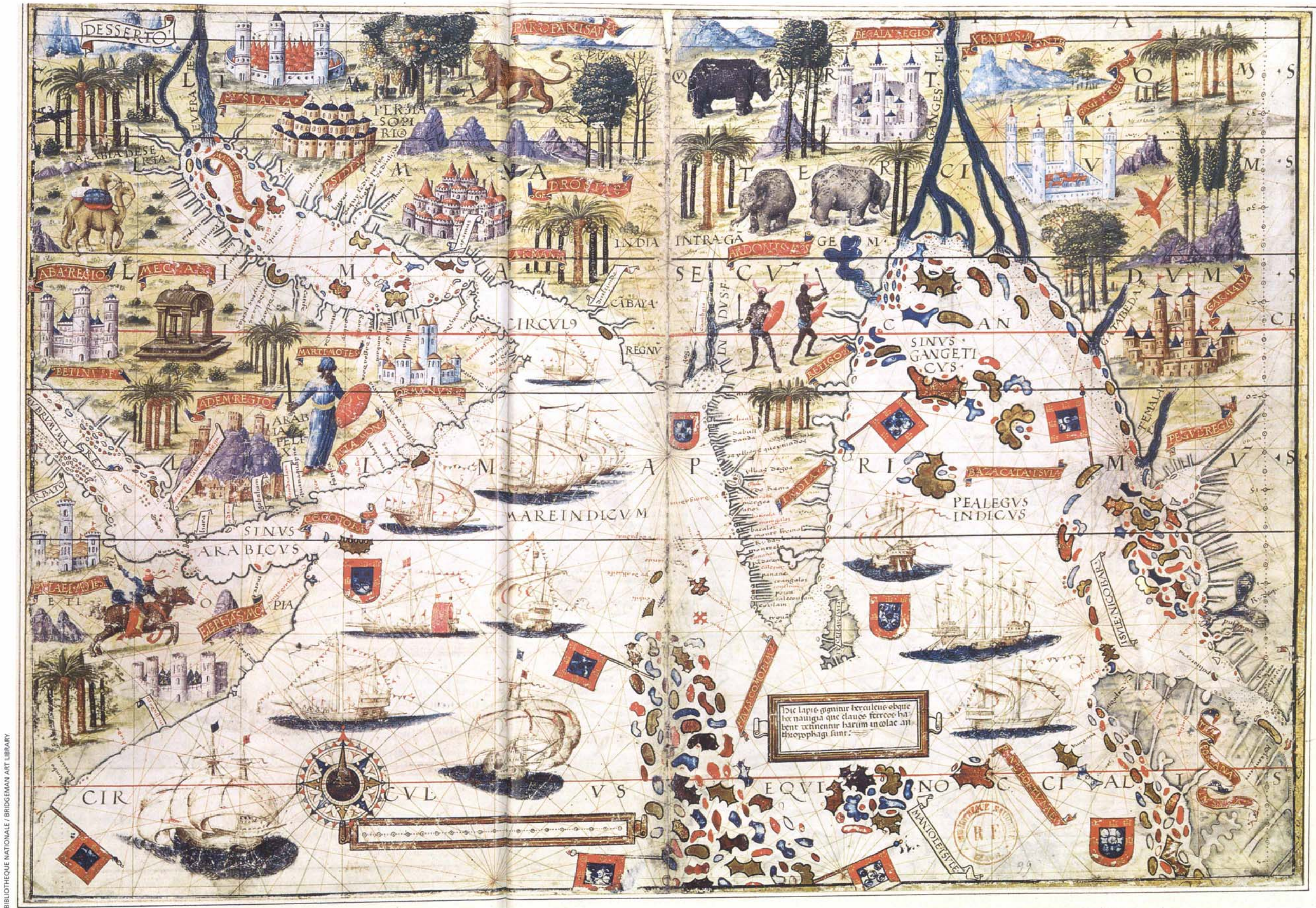
in 1571 he took the city of Manila. Soon an annual galleon was sailing from the Philippines to Mexico with a cargo supplied to Manila by the Portuguese in Macao and, increasingly, by Chinese merchants: Chinese silks, porcelains and manufactured articles as well as spices from the Indian Ocean. The galleons returned from Mexico loaded with silver. Chinese goods were transhipped to Europe from Veracruz, but the local demand for them in Mexico and Peru was so great that in 1631 the Spanish crown banned trade in Chinese merchandise between the viceroyalties to stanch the out-pouring of bullion to Manila and protect their

THE PATTERN OF TRADE CHANGED IRREVOCABLY WHEN EUROPEAN MANUFACTURED GOODS BEGAN TO FLOOD THE EAST.

own captive market for Spanish textiles. By 1640, the Dutch had entered the Indian Ocean and were importing Chinese and Persian silks via the Cape and underselling the Manila exports. The Manila galleons continued to sail, but now their cargoes were distributed in the New World alone.

The route of the Manila galleons was the final connection in a trading network that now circled the globe. Along these routes, silver and gold flowed to the East and luxury goods to the West, just as they had in classical and early Islamic times.

This flow persisted long after Portuguese power was eclipsed by the Dutch Verenigde Oostindische Compagnie and the British East India Company in the early 17th century. It did not change substantially until the East India Company became a territorial power, occupying Bengal after the Battle of Plassey in 1757. It did not change irrevocably until the 19th century, when, in a colossal and carefully thought out reversal of fortunes, European manufactured goods, especially textiles, began to flood the East, redressing the West's trade deficit, recovering liquidity and destroying local economies in the East. And just as the factories of Birmingham and Manchester destroyed the Indian textile trade, the steamship defeated the monsoon. ☉



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scenes of the afterlife and an ancient painted model of the royal barge that carried the pharaohs along the Nile. **Dayton [Ohio]** Art Institute, September 1 through January 3.

**Silk & Leather:** Splendid Attire of 19th-Century Central Asia features different types of garments and accessories worn by the ruling class and urban and nomadic elites of the region. The exhibition includes coats, hats, boots, belts, queue covers, children's clothing, purses, pouches and veils. Leather, felt and fur, as well as a distinctive clothing style that included trousers, made life easier for the horse-riding nomadic pastoralists of the vast, sparsely populated Eurasian steppe. Until the Russian conquest, completed in the late 19th century, the western part of Central Asia, including Samarkand and Bukhara, was ruled by different groups that had originated in the Eurasian steppes. Although they largely gave up their nomadic lifestyle, these ruling elites retained their taste for rugs, textiles and the garments worn on the steppe. The copious production of silk, its brilliant dyeing and multifaceted use in textiles of urban and nomadic manufacture, along with the continued use of leather, were all part of the spectacular blossoming of the textile and related arts during the 19th century in western Central Asia. Textile Museum, **Washington, D.C.**, September 2 through February 26.

**Master Drummer, Master Dancer** is a concert focusing on the close relationship of the master drummer and the master dancer in selected corners of the world: the Middle East, Senegal, North India and Puerto Rico. 8:00 p.m. Big Kresge Hall, **Massachusetts** Institute of Technology, **Cambridge**, September 9.

**Forgotten Empire:** The World of Ancient Persia centered on the largest and wealthiest state in the ancient Near East, which eclipsed Assyria and Babylonia and overshadowed Greece in the west. Between 550 and 330 BC, the Persians ruled an empire that stretched from North Africa to the Indus Valley and from Central Asia to the Arabian Sea. The exhibition shows the splendor of ancient Persia as reflected in its architecture, its material culture and its administration, the legacies of such

**In/Visible: Contemporary Art by Arab American Artists**

is the first exhibition of contemporary art by first- and second-generation Americans of Arab heritage and shows the diversity of their contributions. Some of the 14 artists whose work is included take traditional approaches to art-making; others experiment with new media and practices. All are engaged in redefining their relationships with the geopolitical environment and with the forces that shape their world. Their works explore notions of identity, authenticity, locality and memory; they evoke their makers' varying experiences of living between two cultures. Arab American National Museum, **Dearborn, Michigan**, through October 30.

**The original of Helen Zughaib's giclée print "Prayer Rug for America" (2001, 51 x 33 cm) is in the collection of the Library of Congress.**

great kings as Cyrus, Darius and Xerxes. British Museum, **London**, September 9 through January 8.

**Gold:** The Asian Touch examines the meanings and uses of gold in different Asian cultures. While including some golden status symbols, the exhibition's primary focus is on the subtle and distinctive combination of gold with other materials and its use in enriching and enhancing luxury objects and works of art. Works on view are mostly Chinese and Japanese, but also include gold inlaid and overlaid weapons from Mughal India and gilded silver vessels from Parthian and Sasanian Iran. Sackler Gallery, **Washington, D.C.**, September 10 through February 19.

**Mamluk Carpets?** A Few New Ideas is a lecture by Dr. Jon Thompson that casts a new light on these controversial and mysterious carpets. Textile Museum, **Washington, D.C.**, September 12.

**The Art of Medicine in Ancient Egypt.** The causes of illnesses were little understood in ancient Egypt, and their prevention and cure were major concerns for most Egyptians—concerns that inform much of ancient Egyptian art. This exhibition includes 65 objects from the museum's collection that address illness, allowing visitors to appreciate them in new ways. Included will be the rarely seen Edwin Smith Papyrus, one of the world's oldest scientific documents. On loan from the New York Academy of Medicine, this is the manuscript's first public display in more than 50 years. Metropolitan Museum of Art, **New York**, September 13 through January 15.

**The Root of Wild Madder:** The History, Mystery and Lore of the Persian Carpet. Drawing on his book of this title, journalist Brian Murphy will provide practical information about carpets while exploring the artistic, religious and cultural complexities of the region that produces them. Textile Museum, **Washington, D.C.**, September 17.

**Justice and Mercy Will Kiss:** A Conference on the Vocation of Peacemaking in a World of Many Faiths presents an opportunity for scholars, educators and activists to address peacemaking and the fostering of interfaith dialogue. ☎ 414-288-0263, [www.marquette.edu/manresa/facstaff/conferences](http://www.marquette.edu/manresa/facstaff/conferences). Marquette

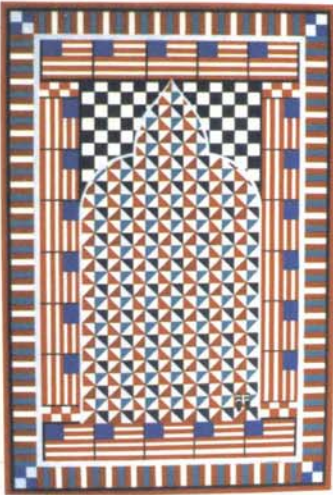
University, **Milwaukee, Wisconsin**, September 22–24.

**Viewing Text, Reading Image:** Examining a 16th-Century Manuscript offers a unique opportunity to examine the museum's 1584 copy of Nizami's *Khamisa* (*Five Tales*), a 12th- to 13th-century quintet of long narrative poems—among the most copied and illustrated works of Persian literature—that is both a collection of beloved stories and an ethical and moral commentary. The exhibition considers the process of producing such a work, from the modular layout of the text pages to the design of the painting sequences, and finally the felicitous, as well as slips, of the copyist's pen. The full impact of the original *Khamisa* is further explored through accompanying translation of the text and explanation of the images. University of Pennsylvania Museum, **Philadelphia**, September 27 through March 26.

**Threads of Tradition:** Palestinian Costumes Throughout History displays 21 sets of women's dresses, men's ensembles and children's clothing drawn from the Institute's collection, which has never before been exhibited, and from the Palestinian Heritage Center in Bethlehem. The costumes, grouped by region, are complemented by belts, shoes and jewelry, textiles and pillowcases, and a collection of dolls dressed in traditional Palestinian costumes. Besides demonstrating the skills of the weavers, dyers, seamstresses and embroiderers who made them, the costumes also express the wearers' status and origin through their color, style and embellishments. Oriental Institute, **Chicago**, October.

**Tiraz:** Early Islamic Textiles comprises nine examples of rarely seen fabric fragments, along with an exceptional Iranian ceramic bowl bearing the name of Caliph Marwan II. Created between the seventh and 13th centuries, the *tiraz* demonstrates the continuity of the Greco-Roman period with the artistic textiles of medieval Islam. Some early textiles in this exhibition demonstrate combinations of late antique and Coptic motifs with the synthesizing of human and animal figures. **Brooklyn Museum, New York**, October through February.

**Pearls of the Parrot of India:** The Emperor Akbar's Illustrated *Khamisa*,



1597/1598. The *Khamisa* (*Five Tales*) of Indian poet Amir Khusraw Dihlavi, dating from 1597 or 1598, is represented here by one of the most sumptuous manuscripts of the early Mughal period. Twenty-one surviving full-page illustrations from the manuscript are owned by the Walters Art Museum in Baltimore, another eight by the Metropolitan. The unbinding of the Walters's manuscript for conservation purposes will allow all 29 painted folios to be united in this jewel-like exhibition. Also on view will be eight to 10 decorative and text pages from the manuscript and four or five other Persian and Indian manuscripts belonging to the Walters. Metropolitan Museum of Art, **New York**, October 14 through January 29.

**A Heritage for Our Time:** The Continuation of Ottoman Music (Bugüne Bir Miras: Osmanlı Musikisinin Devamı). Original compositions for instruments and voices combine the idioms of Ottoman traditional music with contemporary media and methods. *Mehter* (Janissary), *sema* (devotional) and *ince saz müziği* (instrumental music) are explored, producing striking new pieces which carry on and extend their traditional models. The concert will feature the first appearance of The New England Drum and Winds Mehterhane. 8:00 p.m. Paine Hall, Harvard University, **Cambridge, Massachusetts**, October 14.

**The Golden Age of Arab Science.** The coming of Islam and its subsequent territorial expansion, especially after the establishment of the Abbasid caliphate in Baghdad, brought about an intellectual flowering that led to remarkable advances in all branches of science. From Andalusia to the borders of China, Arabic became the language of scholarship. Going beyond their translations of their Greek, Iranian and Indian predecessors, Arabic-speaking scientists carried the torch of knowledge to new heights and into new disciplines. Scholars worked in such fields as philosophy, mathematics, astronomy, optics, medicine, pharmacology, chemistry and alchemy, grammar, geology and engineering. The exhibition presents Arab achievements in all these sciences, and closes with examples of their application in practical forms. Institut du Monde Arabe, **Paris**, October 25 through March 19.

**The Archetype of Sacrifice:** Illusion or Transformation. Every culture, religion, spiritual tradition and psychology has developed important rituals around sacrifice. The need to integrate this archetype into our lives remains real today. This conference brings together recognized figures from the fields of religion, Jungian psychology and cultural anthropology to look at both positive and negative aspects of sacrifice. Grotto Conference Center, **Portland, Oregon**, October 28–30.

**Style and Status:** Imperial Costumes From Ottoman Turkey presents some 100 of the world's finest and most luxurious Ottoman royal textiles from the Topkapı Palace Museum, the Kremlin Armory and other collections. Distinguished by their bold designs, breathtaking colors and technical complexity, Ottoman imperial silks were fashioned into clothing, furnishings and such "movable architecture" as tent hangings and floor covers. They denoted rank and privilege and were important in the economic, political and ceremonial life of the Ottoman Empire. By the late 15th century, the Ottoman silk industry, centered in Bursa, exported raw and woven silk as well as cloth of gold and silver to Europe, the Balkans and Russia—the Ottomans' largest market. Some exported fabrics were fashioned into ceremonial robes or hangings but most became luxurious ecclesiastical items, such as chasubles and copes. The artistic influence of Ottoman textile motifs endures today, inspiring artists like William Morris, who incorporated Ottoman motifs into his textiles and wallpapers. Sackler Gallery, **Washington, D.C.**, October 29 through January 22.

**No Place for a Lady** explores aspects of the history of women's travel, from the difficulties of transportation to visiting harems and climbing the Pyramids. Featuring artifacts related to past travels and others reflecting the many cultures that women travelers have encountered, the exhibition focuses on women from the 18th century to the 1930's, including Lady Mary Wortley Montagu, Lady Hester Stanhope, Ida Pfeiffer, Jane Dieulafoy, Isabella Bird and Gertrude Bell. **Vancouver [B.C.] Museum**, November 1 through September 30.

**The Vision of Contemporary Arab Photographers** presents the product of 30 people taking pictures of what is, in one way or another, their own world: Some of the photographers live in the Arab world; others have left it but returned; some have left for good, carrying parts of their world with them; still others were born abroad but are ineluctably linked to the Arab world. Here, the goal is to reverse the orientalist photographic paradigm and, instead, take a look at the Arab world through its own eyes. The images vary by subject, color, format, locale and in every other way; the photographers vary by nationality, gender, personal history and relationship to the Arab world. As a result, the exhibition is not an attempt to define identity, but is, instead, the emanation of an identity. Institut du Monde Arabe, **Paris**, November 15 through January 15.

**New York Arab-American Comedy Festival** is seeking submissions from Arab-American artists, with the goal of producing the third annual Festival this fall. The Festival will provide an excellent industry showcase for participating artists and will attract positive media coverage for them and the Arab-American community. It will include comedic theater, stand-up comedy and comedic films. All submissions must be received by August 15. ☎ [www.arabcomedy.org](http://www.arabcomedy.org). **New York**, November 13–16.

**Middle Eastern Rap, Funk, Disco Night** presents Middle Eastern and American musicians, together with Turkish and Armenian rappers and singers, in a program of music rarely heard by American audiences. 9:00 p.m. Ryles' Jazz Club, Inman Square, **Cambridge, Massachusetts**, November 19.

**The Ali Ufki Sacred Music Project** is a series of interactive programs of music and conversation intended to foster awareness, deepen dialogue and celebrate commonalities among Jews, Christians and Muslims. The inspiration for these programs is the music and life of Ali Ufki, who lived in the cosmopolitan environment of 17th-century Istanbul. Born Wojciech Bobowski, a Polish Christian, he converted to Islam after his capture by the Ottoman Turks at the age of 30, and became renowned as a musician and translator in the imperial court. Concert at 5:00 p.m. Beth Zion, **Brookline, Massachusetts**, December 4.

**Alexander's Image and the Beginning of Greek Portraiture** illustrates the reign of Alexander the Great of Macedon and the beginning of portraiture through ancient coins. Alexander opened the way to revolutionary economic and ideological changes in the ancient monetary system, and his idealization and deification on the coins of his successors led to new ways of representing the human figure. With the images of Alexander the Great, the use of

individualized portraiture for purposes of political propaganda began in the western world. Sackler Museum, **Cambridge, Massachusetts**.

**Arts of the Islamic World.** From the estate of Doris Duke, a magnificent collection of Islamic art including ceramic tiles, textiles, paintings and jewelry is installed along with works from the Academy's permanent collection. This new gallery includes a selection of objects reflecting both the secular and religious life of Islam. Furniture, such as finely carved wooden doors and chests; woven objects such as garments, carpets and other textiles; decorative objects such as tiles, plates, jars, ewers, bowls and oil lamps made from metal, ceramic materials, glass and stone; and works on paper such as folios and manuscripts are among the precious objects to be displayed. ☎ [www.shangrila-hawaii.org](http://www.shangrila-hawaii.org). Shangri La, **Honolulu**.

**Fountains of Light:** Islamic Metalwork from the Nuhad Es-Said Collection includes candlesticks, inkwells, incense burners and bowls created between the 10th and 19th centuries throughout the entire Islamic world. As portable symbols of wealth and status, these objects are representative of a world in which the expression of public rank and status was juxtaposed with popular beliefs and superstitions. Sackler Gallery, **Washington, D.C.**

**The Saudi Aramco Exhibit** relates the heritage of Arab-Islamic scientists and scholars of the past to the technology of today's petroleum exploration, production and transportation, set against the background of the natural history of Saudi Arabia. **Dhahran, Saudi Arabia**.

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