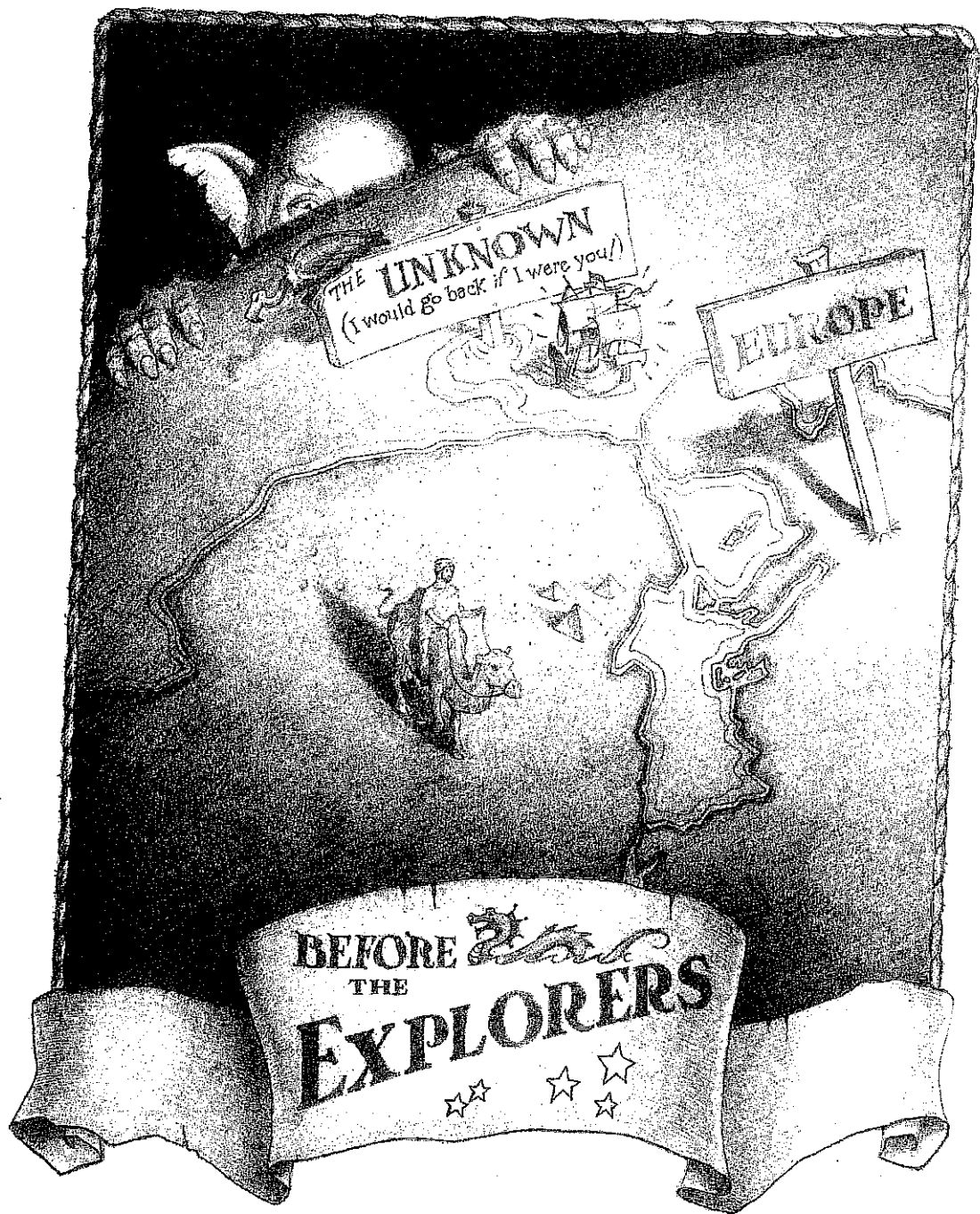


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Before the Explorers



IF YOU WERE TO LOOK AT A MAP of the world as it appeared to people in Europe six hundred or more years ago in the fourteenth century, you would wonder how mapmakers could have been so mixed up. There was Asia, for instance, ending up in a curly tail pointing at Africa. Asia, of course, was far away from Europe, but Africa was right next door and mapmakers didn't know how to finish it off. Either they let the whole continent dribble away to nothing or they made up any old shape that they pleased. They also added an imaginary continent that stretched across the bottom of most maps. Why? For balance, they said. It was only logical. Otherwise the world would be top-heavy. Finally, there was empty space at the edge of every map which everyone knew was the Unknown.

So why didn't someone go out and take a look?

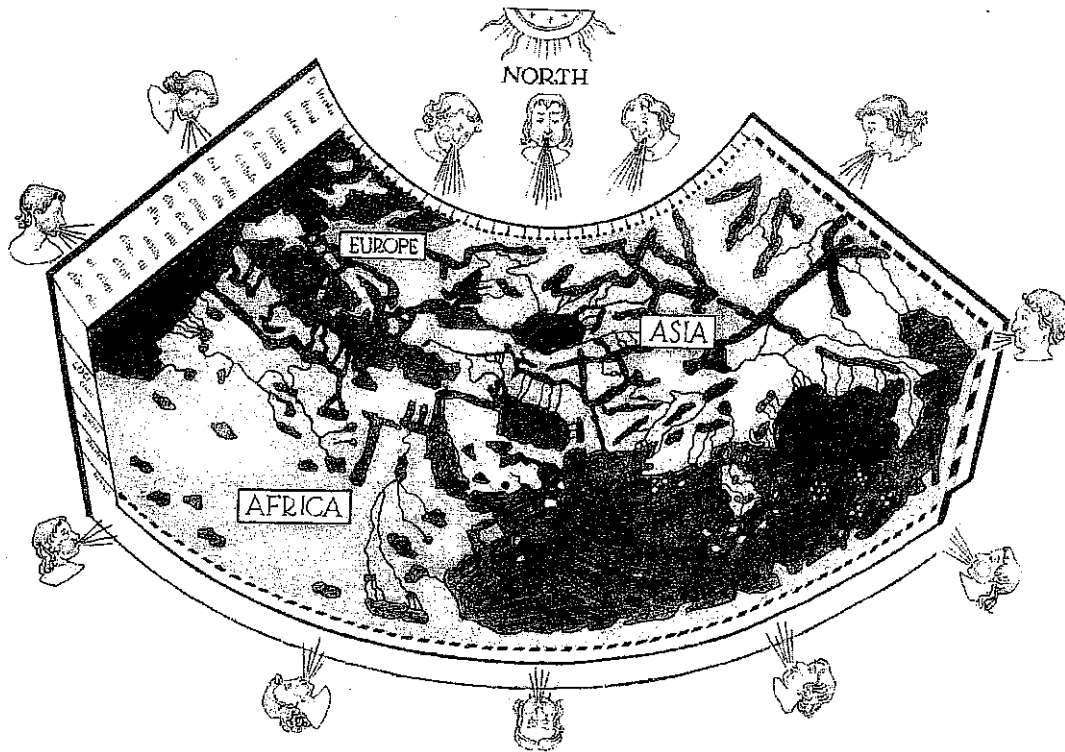
A mapmaker in 1400 would have told you that the map showed all there was to the world. There was no more. Besides, people knew all they needed to know. It was common knowledge that the Unknown sucked you under. Or burned you up. Or simply left you to rot in nowhere. No one who tried to go there could possibly get back. No one wanted to go and no one was curious.

But in earlier times people had been curious and philosophers had tried to figure out what the world was like. Aristotle, for instance, who lived in the fourth century B.C., noticed that the shadow of the earth on the moon during an eclipse was curved. That meant that the earth was a sphere, he said. The sun and moon must revolve around it. Other philosophers agreed. Claudius Ptolemy, who lived four hundred years later in the second century after Christ, and is called the Father of Geography, placed north at the top of the map and east at the right-hand side. He applied astronomy and mathematics to the study of the earth and experimented in drawing the sphere upon the flat surface of a map, allowing for the curve of the earth. He divided the sphere into grids of latitude and longitude, which were supposed to make it easier for navigators to know where they were. The latitude represents an imaginary line parallel to the equator. Every degree is equal to about sixty-nine miles either north or south of the equator.

In addition, navigators had compasses and crude instruments to help them fix their position by observing the angle of the sun or of the North Star. No instrument had been invented yet to determine the longitude, the north-south lines on a map which established the distance as one traveled from east to west or west to east. There was no clock that kept accurate time on a rolling ocean. All anyone could do was to guess at the speed of the boat, but since this was not an accurate measurement,



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PTOLEMY'S MAP

many of Ptolemy's calculations were wrong. He estimated, for instance, that the circumference of the earth was 18,000 miles, about three-fourths its actual size, and he put the equator 400 miles too far north. Still, he did try to make a systematic picture of the world based on scientific principles, and he identified eight thousand places.

Then suddenly all this wondering and figuring stopped. Christianity was a new religion, fighting for survival, and in A.D. 391 Christians burned the city of Alexandria and its famous libraries, which contained, along with many ancient treasures of scholarship, the work of Ptolemy. Christians did not believe in scholarship. They thought it was sacrilegious to be curious. Anything people wanted to know, they said,

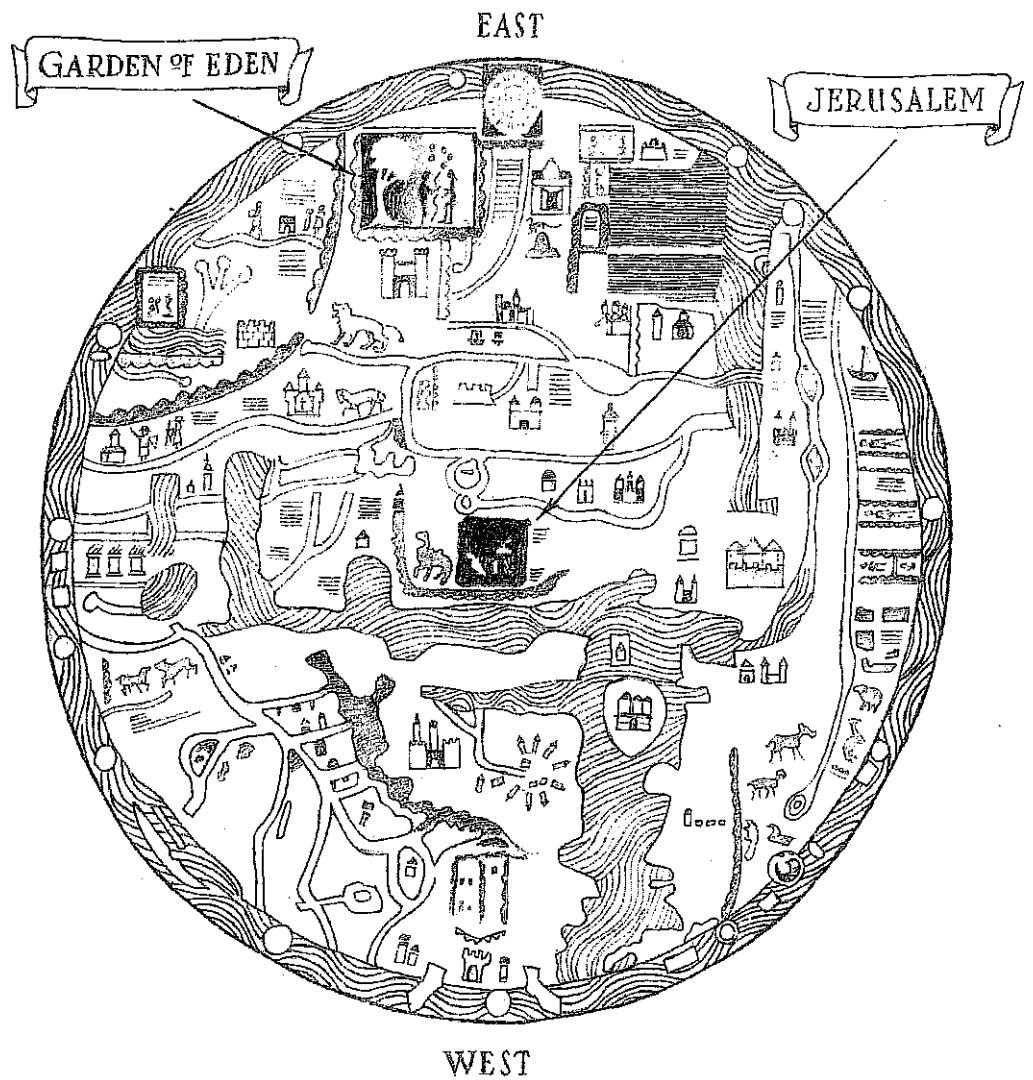
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12 BEFORE THE EXPLORERS

could be found in the Bible. So when they drew maps, they put Jerusalem at the center of the world. East was on the top of the map with the Garden of Eden sprawled across it, and according to some people, the world was flat. Didn't the Bible talk of the "four corners" of the earth? Anything with corners was square and flat. World maps at this time



were largely decorative. They were not meant to be guides to help people get around, but pictures to prove the glory of God. And in order to make the sea more interesting, mapmakers scattered islands around—some legendary, some with made-up names, some with no names.

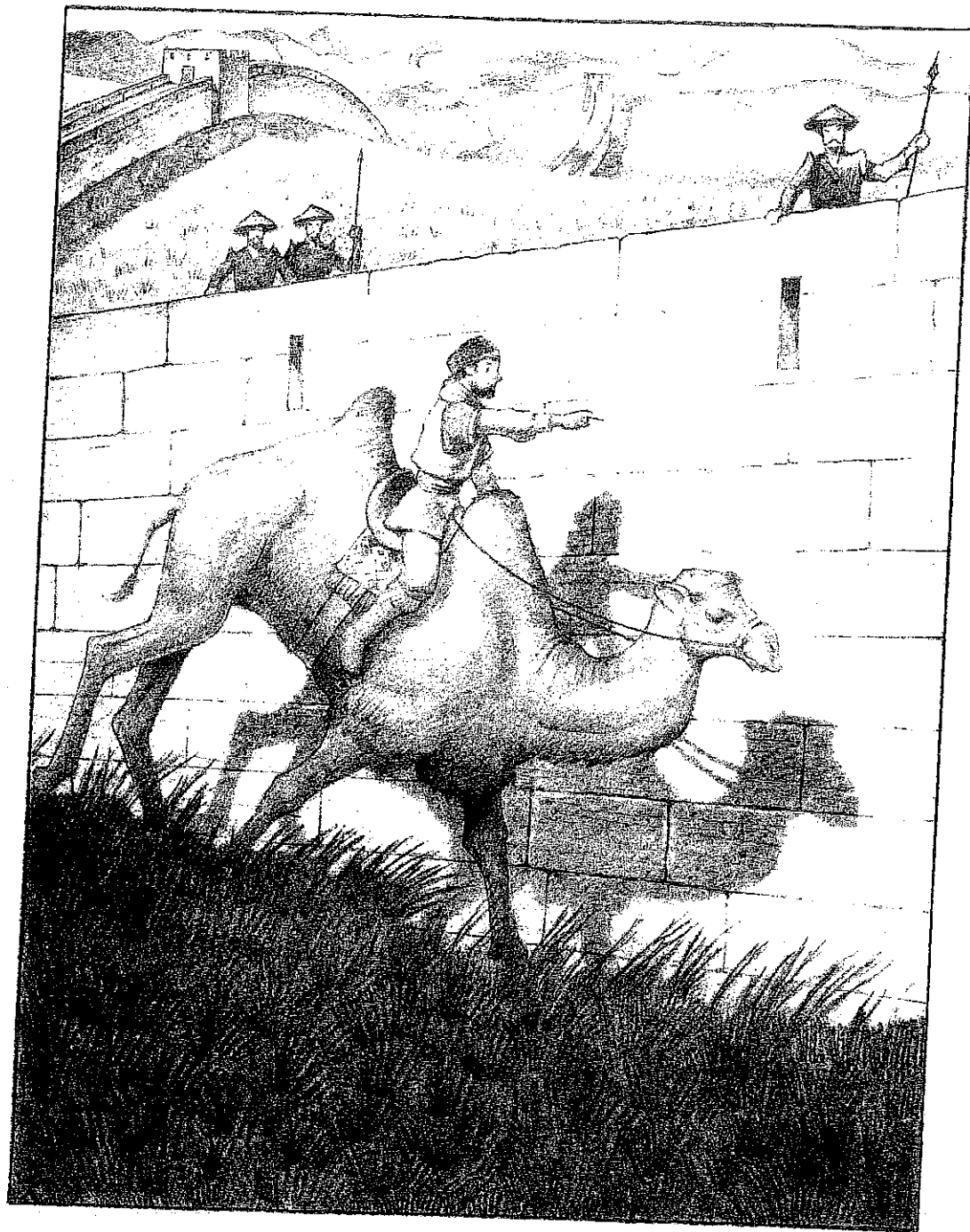
Europeans went on thinking like this for over one thousand years, but in China there were already fairly accurate maps of that part of the world. Some of these maps included such distant places as the Nile River, Sudan, Zanzibar, and part of the Mediterranean Sea. Of course the Chinese knew nothing about the Atlantic Ocean and what lay beyond, but in 1405, before Europeans had begun sending out explorers, a Chinese navigator, Chêng Ho, was leading expeditions of 317 ships and 37,000 men to nearly every land bordering the China Sea and the Indian Ocean. The largest of these ships carried nine masts and was 444 feet long, which, of course, would have astounded Christopher Columbus, whose *Santa Maria* measured somewhere between 75 and 90 feet. In a total of seven expeditions Chêng Ho took these ships as far west as the entrance of the Persian Gulf and the mouth of the Red Sea. In 1433, however, a new emperor decided that all this traipsing around to different countries was a waste of time. After all, he said, China was the center of the world; it had everything that it needed or wanted. So the Chinese stayed home.

Although Europeans would not have seen Chêng Ho's fabulous flotilla, they may have heard rumors of it. If so, these stories only emphasized again what Europeans already knew. China, and indeed the entire Indies, was an exotic place. Hadn't Marco Polo, that young Venetian who had crossed deserts and mountains to reach China, written a firsthand account of the splendor and riches he had seen during his seventeen years there? Many people didn't believe his fantastic tales; still, they couldn't forget them. Besides, he had brought back


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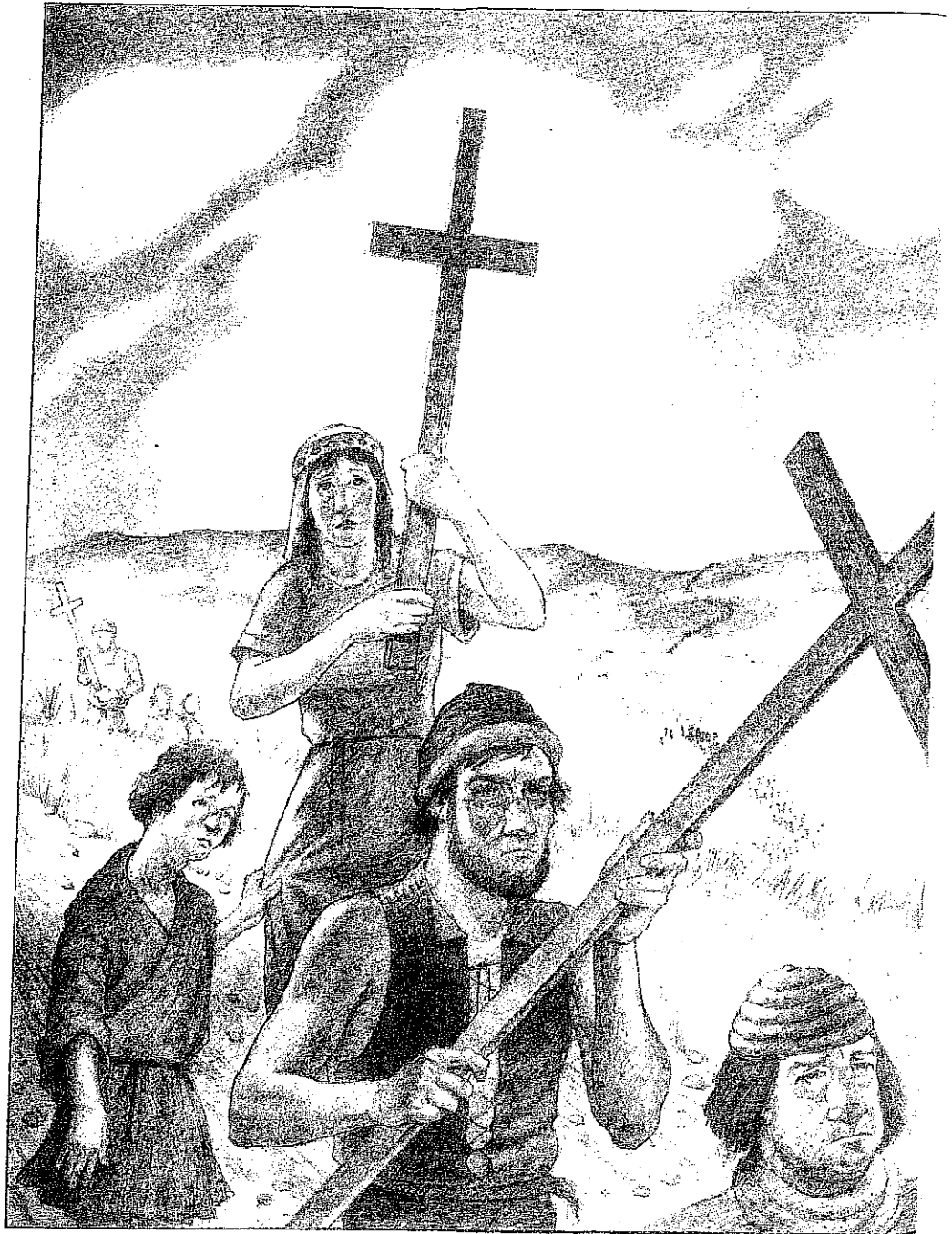
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rubies and emeralds and diamonds which people could see with their own eyes. Other travelers, missionaries and traders, also had stories of precious stones, spices, and silks that could be found throughout the Indies. So Europeans built up a picture of what a marvelous place the Indies must be. It was too bad it was so hard to get there.

About the same time as the Chinese were stopping their overseas ventures, Europe was waking up. Beginning in the fourteenth century, change began creeping over the continent. For one thing, more people had traveled. There had always been traders and missionaries, and even ordinary people sometimes made pilgrimages to holy places—to Rome, if they could manage it, and even to Jerusalem, their Holy City. Although Jerusalem had been in the hands of the Muslims since 637, Christians were treated well when they came on pilgrimages. But in the eleventh century the ruling Muslims began to harass visiting Christians and to molest their shrines. So now all Europe was up in arms. In a fever of enthusiasm they set out to rescue Jerusalem. Men, women, and children—many who had never been away from home before—rich and poor together streamed across Europe to the Holy Land. Because they carried crosses, they were called crusaders. Between 1095 and 1271, there were nine crusades. Although the crusaders did manage to recapture Jerusalem on the First Crusade, they lost it again and were never able to take it back on any of their later expeditions. Still, when the crusaders returned home, they were not the same people. They had seen so many new places, met so many new people, and encountered so many new experiences that, although they were as religious as ever, they had, almost without knowing it, made room in their minds for new ideas.

And new ideas were coming. By 1406 a copy of Ptolemy's *Geography* had been rediscovered and translated into Latin, and Ptolemy quickly became the authority on all geographical questions. No one doubted



now that the earth was a sphere. Interest was revived in other ancient Greek and Latin writers. And in the first half of the fifteenth century Johann Gutenberg invented movable type, and as books were printed, more people read. They became more curious and asked questions.

Moreover, people in Spain and the countries along the Atlantic seaboard were feeling hemmed in by the Muslim world which almost surrounded them. They felt threatened by people who had a different religion and different customs. And they resented the fact that Muslims controlled the spice market in the Indies. Europeans needed spices, particularly cloves, which not only helped to preserve meat but covered up the taste when it was spoiled. They were big meat-eaters, but the only way they could get spices was to buy them from traders who went to Egypt and other Muslim countries. But not every trader could even get there. Two Italian cities, Venice and Genoa, took charge of the Mediterranean Sea. If people wanted spices, they had to buy them from Venetian and Genoese traders. And who could afford the prices that the Venetians and Genoese charged? Raised five hundred times their price, spices became so valuable, they were often used instead of money. The only other route to the spices, silks, and gold of the Indies was by caravan from Constantinople across the long overland road to China. This is the route that Marco Polo took, but the round trip took three years and goods obtained this way were also expensive. By 1453 even this route would be cut off when the Turks, at war with Christians, took the city of Constantinople and refused to allow any overland travel.

So now there was not only an interest in the geography of the world but a need to know more about it.

It was time to take a look at the Unknown.

