

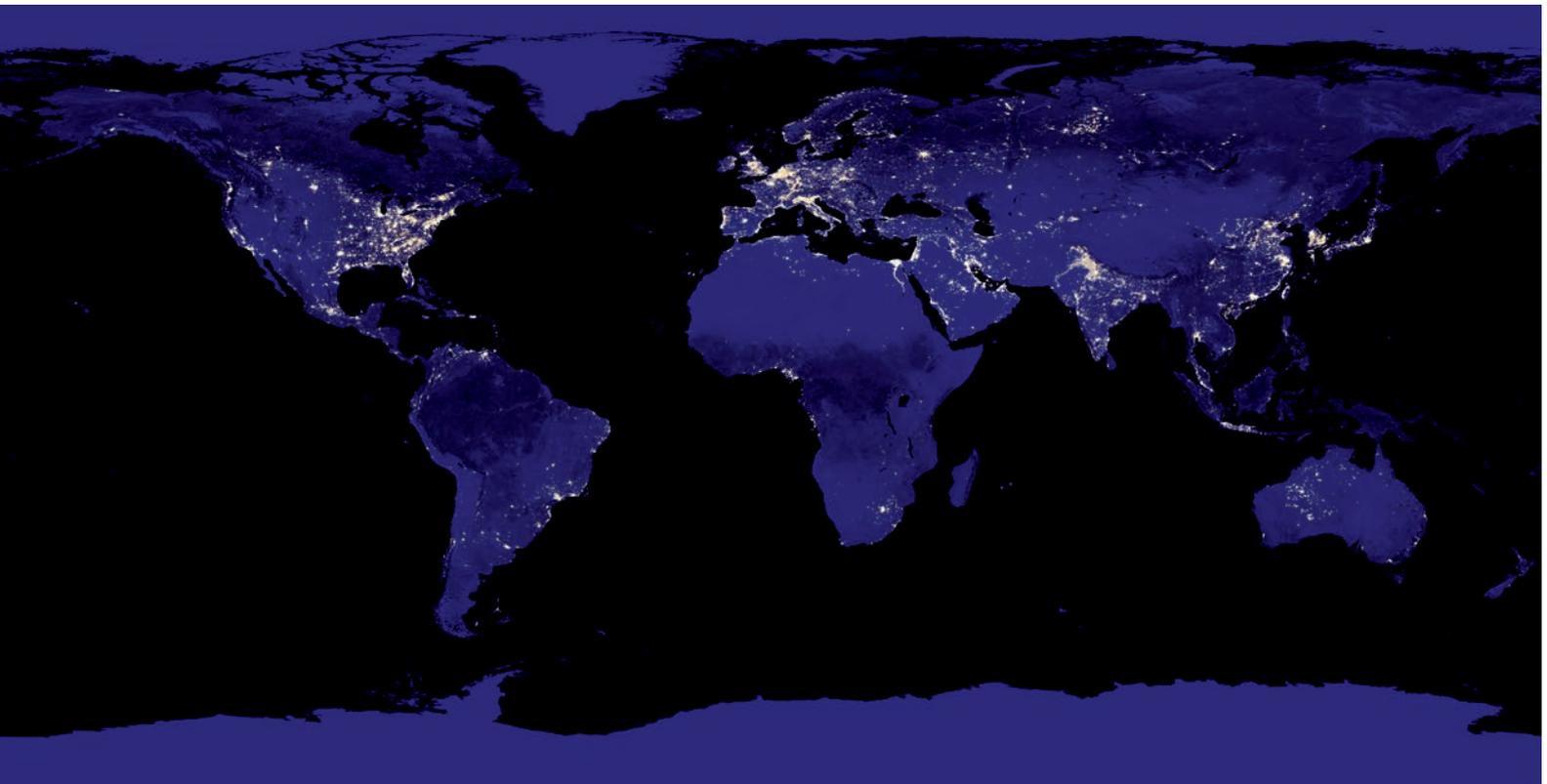


# Panorama

A World History

# Introduction

## The Earth: World History's Theater



A composite satellite view of the earth at night.

**M**ost of us spend our typical days (when not staring at cell phones or computer screens) in the company of friends, family, or work and school associates. But we are also connected, often unconsciously, to numerous other networks of human relationships that affect the course of daily life. Some of these “communities” may be fleeting (passengers sharing an airplane flying at 30,000 feet), and some may be very large (all members of the Greek Orthodox Church). No individual anywhere in the world is truly isolated from global relationships, not hunters in the Amazon rainforest, not peasants in high Himalayan valleys. The global nature of change is not simply a matter of one event there (war in the Middle East) affecting some condition of life here (a rise in the price of

gas). Nor is it just that products or ideas spread quickly from one place to another. The most striking feature of global interaction is that a significant development occurring in one place is likely to set off a complex chain reaction, disrupting and rearranging numerous relationships over an extensive area. A surge of change in one network of relationships, international trade for example, easily sparks changes in other networks, such as diplomatic negotiations or the migration of workers from one country to another.

As individuals we carry on our daily routines right in the midst of this tumultuous restructuring. We are shielded to some extent from its more jarring effects by our cultural and social bonds, some of them new, some long tested. Even so, all aspects of life are subject to disturbance and revision. The “cultures” that we like to think of as solid and enduring are themselves undergoing ceaseless change.

For how long have peoples of the world been interconnected? Since the Industrial Revolution? Since World War II? A better question might be: How far back in time would we have to go to find a world divided into a collection of separate, self-contained societies, each moving through time along its own track, and unresponsive to wider regional developments? The answer is that we could cast back hundreds of thousands of years and still not find a world of completely atomized societies. Indeed, the earliest history of humankind is a story of long-distance migrations of hunting and foraging bands to all the world’s land masses, a process that involved interaction between one group and another and therefore at least small disruptions and surprises wherever such contact occurred. In a sweeping way, then, the history of humanity from remote times is a tale of how groups of men and women connected with one another and how those interactions affected and complicated the lives people lived in different parts of the earth. This challenges us to rethink humanity’s history in a more holistic, interconnected way, history that is not only the stories of different nations, civilizations, and regions but also a single story of the species and its development on the spherical earth over the past few million years. Indeed, the history of humankind and the planet are inextricably connected.

We may find it easier to think about human history on a large scale and over the very long term if at the outset we have some familiarity with the planet’s geographical “personality,” that is, its major land masses, oceans, and large topographical and climatological features. If we consider the whole sphere as the primary “place” where history has unfolded, and keep that context in mind as we investigate the past, we may better grasp the location of particular places and peoples in relation to one another. We may also better

## Chapter Outline

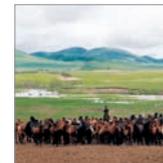
### THE BIG LAND MASSES: THE MAIN STAGE OF HISTORY

Moving Land Masses  
Seven Continents, or Only Five?



### AFROEURASIA

The Great Arid Zone  
The Tropical Belt  
The Northern Latitudes of Temperate Climate  
Afroeurasia’s Mountain Spine  
The Eleven Seas  
Rivers



### AUSTRALIA

### NORTH AND SOUTH AMERICA

Connecting the Americas  
The Americas’ Long *Cordillera*  
Rivers and Seas



### THE OCEANS



equip ourselves to make historical connections between one place or group of people and another, to compare historical developments in different places, and to understand large-scale developments that cut across the conventional borders between states, cultural groups, or civilizations.

## The Big Land Masses: The Main Stage of History

Most of us think of the earth's surface as the two-dimensional space where ground meets sky. In fact the human drama has unfolded on a stage that has depth as well

**biosphere** The zone of the earth that can support life.

as length and width. This is the **biosphere**, the zone that shelters all life-forms, including human beings.

The biosphere may be visualized as constituting three layers, each one making up part of the whole. On top, as it were, is the atmosphere. About 78 percent of this layer of gasses is nitrogen and about 21 percent oxygen, the substance humans and other higher life-forms need to survive. Second is the hydrosphere, the watery realm, about 97 percent of which is the oceans. Third is the lithosphere, that is, the solid earth, or outer crust of sand, soil, rock, and fossilized organic matter that we recognize as coal, oil, and natural gas. Humans depend for survival on the stability of the biosphere and live in relationship to its sun-powered cycles—photosynthesis, wind, and the evaporation and condensation of water. Our species has a genetic relationship to all living organisms, sharing, for example, a significant portion of our genes with the banana. In short, the arena of history is not just Asia, England, or the Aztec empire, but the “green skin” that envelops the earth.

For thousands of years, humans have known how to move across water, which covers about 71 percent of the planet, in various types of boats. Recently, we have mastered air travel and even ventured beyond the atmosphere into space. Nevertheless, our history has played itself out mostly on the surface of the lithosphere, the rocky earth, which we see on the globe as chunks of land, some enormous and some small.

### Moving Land Masses

The science of tectonics tells us that the lithosphere is an interlocking puzzle board of sections, or plates. Heat and turbulence in the softer part of the earth's mantle below the lithosphere cause these plates to move. Sometimes they

**tectonic plates** Irregular blocks of solid rock that make up the earth's lithosphere and that constantly shift and change shape.

drift apart, sometimes they converge. The seams between the **tectonic plates**, which for the most part lie along the floors of the oceans, are places of volcanic activity and earthquakes. The movement of the plates relative to each other changes the shape and position of the land masses. This phenomenon happens of course in geological time, at the rate of not more than a few centimeters a year.

About 200 million years ago, one giant land mass, the continent geologists call Pangaea, dominated the earth. Over the succeeding tens of millions of years, it slowly broke



More than 200 million years ago



180 million years ago



65 million years ago



Present

**Changes in the earth's plate structure.** The land masses that humans inhabit sit atop tectonic plates that are continually in motion. Satellite imagery can accurately detect the tiny distances that continents move in a year's time. On the scale of hundreds of millions of years, patterns of continental drift have affected the ways living species have evolved.

into segments along several lines of seismic upheaval. First it split into two supercontinents, then into several. India, once part of the continent called Gondwanaland, broke off to glide relentlessly northward. It rammed into Eurasia about 30 million years ago, the collision buckling the earth to form the Himalaya Mountains. Because the process of continental drift continues, the land mass configuration that has endured for the past 20 million years or so is only temporary. Africa is heading toward Europe, eventually to close off the Strait of Gibraltar and transform the Mediterranean into an inland sea. Coastal California, part of the Northern Pacific Plate, pushes northward and, to the possible satisfaction of some New Yorkers, might someday separate itself from the rest of North America.



## Seven Continents, or Only Five?

Schoolbooks still teach that there are seven primary land masses, or continents: Africa, Antarctica, Asia, Australia, Europe, North America, and South America. In our view this convention needs rethinking. If we accept even a loose physical definition of a continent as a distinct land mass surrounded, or nearly so, by water, Europe and Asia do not separately qualify. No significant waterway or other partition divides the eastern side of Europe from the western side of Asia. Rather, the two places constitute, and have constituted for millions of years, a single great land mass. A little more than a century ago, scholars named this land mass Eurasia. Since then, many have recognized that the standard physical definition of a continent properly applies to it. Logically, then, Europe is a long peninsula at the far western end of Eurasia, that is, a *subcontinent* roughly comparable to South Asia (Bangladesh, India, and Pakistan), a peninsula that juts south.

The precept that Europe is a continent goes back to the ancient Greeks, whose world centered on the Aegean Sea in the eastern Mediterranean basin. They conceived the planet as made up of three parts: Europe was the territory generally north and west of the Aegean Sea (including the Republic of Greece today), Asia was all land to the east and southeast, and Africa (called Libya) lay south and southwest.

In the Middle Ages, European scholars perpetuated the Greeks' three-part scheme, though recognizing that these territories were much larger than the Greeks had known them to be. Europeans came to identify their region with "Christendom," the land where most Christians lived, and they defined Asia and Africa as the continents inhabited

mainly by people who were *not* Christians. Therefore, religion, not an ocean or a sea, separated Europe from Asia. This was one way to define what continents were, but this definition was based predominantly on *cultural*, not *physical* distinctions.

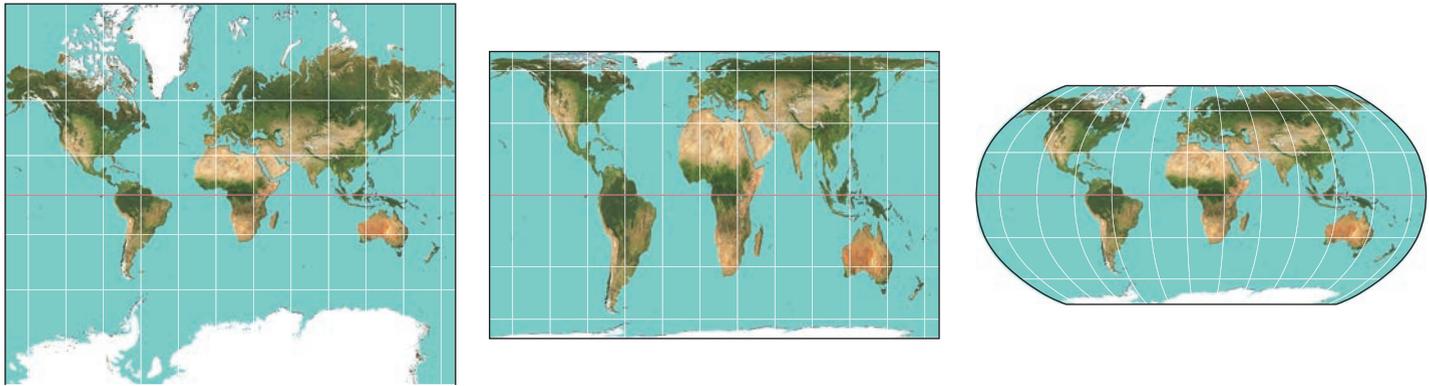
But where exactly did Europe leave off and Asia start? In the eighteenth century, a Swedish military officer who traveled to Siberia proposed the Ural Mountains of Russia as a suitable continental boundary.<sup>1</sup> Debates over the proper dividing line continued, but gradually European scholars came to accept the Urals as a "natural" partition, even though those round-topped mountains rise no higher than about six thousand feet and have no compelling significance as a topographical, cultural, or historical boundary. The same may be said of the Bosphorus and Dardanelles, the two straits that connect the Mediterranean with the Black Sea and that have served conveniently to demarcate Europe from Asia. But those straits have hardly ever impeded the flow of history, and today one can drive from "Europe" to "Asia" on either of two bridges across the Bosphorus. Yet despite the obvious artificiality of the markers, the doctrine of European continent-hood has persisted. European nations came to dominate much of the world militarily and economically in the later nineteenth century. To them, the idea of Europe as a primary world region seemed more natural than ever.

One standard map of the world has reinforced this idea. In 1569, Gerardus Mercator, a Flemish cartographer, devised a flat projection of the world as an aid to sea captains: A straight line drawn between any two points on the map represents a constant true compass bearing. The Mercator map of the world, which until recently served as the standard

### An ancient Greek map of the world.

Hecateus of Miletus, a Greek scholar of the fifth century B.C.E., conceived of this circular map of the world. Why do you think Hecateus located the Mediterranean Sea at the center of the map?





**MAP I.1** From left to right: Mercator, Gall-Peters, and Robinson map projections.

The sixteenth-century Mercator world map, which severely distorts the relative size of land masses, was used in school rooms for centuries. In 1973, Arno Peters published an equal area map of the world. It represents the relative size of land areas accurately but distorts their shapes. The Robinson projection, devised in the 1960s, attempts to strike a balance between size and shape distortions. Peters aimed deliberately to correct what he regarded as the Eurocentric bias of the Mercator projection. How do you think the Gall-Peters map accomplishes that aim?

projection, makes Europe look much bigger than it actually is relative to regions that lie farther south. This is because this projection severely distorts the size of land masses toward

**latitude** The imaginary east-west lines that circle the earth and that indicate distance in degrees north and south of the equator, which has the value of 0 degrees.

the poles, so that territories at far northern or far southern **latitudes** appear much larger than they actually are relative to lands nearer the equator. Consequently, Europe, from the southern

end of Greece to the northern tip of Norway, looks much bigger relative to South America, Africa, or the Indian subcontinent, for example, than it really is on the round globe.

Mercator maps also sometimes situate Europe in the center of the flat map relative to all four of its edges. That configuration requires pushing the equator to the lower third of the map, which falsely compresses the size of lands in the Southern Hemisphere relative to Europe and the rest of the Northern Hemisphere. Looming as large and conspicuous as it does on this projection, Europe appears as though it might deserve membership in the club of continents.

All flat map projections distort size, shape, distance, or direction in *some* way because the surface of the earth is not flat but curved. Accuracy of all these elements requires a globe, an object impossible to reproduce on a book page. Since the eighteenth century, cartographers have been publishing various equal area maps that rectified Mercator's size perversions. Projections in wide use today, such as Robinson maps, make agreeable compromises between shape and volume of land areas, though they may still somewhat exaggerate size near the poles (see Map I.1).

## Afroeurasia

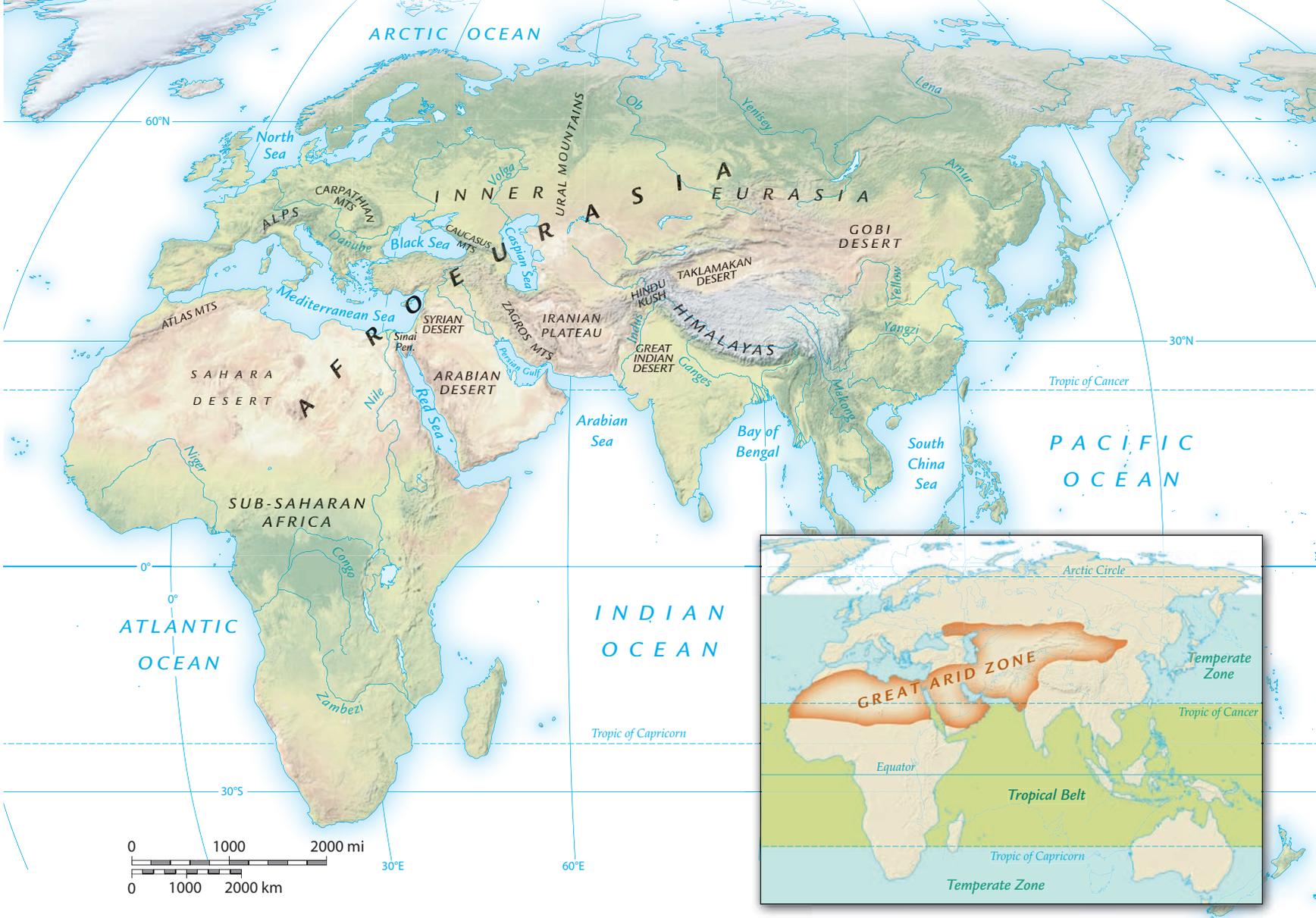
Accepting the idea of Europe as an integral part of geophysical Eurasia, students of global history should find it easier to conceive visually of that entire land mass from the North

Atlantic to the North Pacific as a continuous stretch of territory within which humans have lived, migrated, fought, and traded for many thousands of years. But what about Africa? Because it is separated from Eurasia only by the Mediterranean and the Red Seas, it qualifies as a continent by the conventional definition, though barely. Africa also rests on one of the large sections of the lithosphere known as the African Plate. Is it possible, nevertheless, to conceive of Eurasia and Africa together as constituting *one* continent? Look at Map I.2. Cover up the Mediterranean Sea with the thumb of your left hand and place the index finger of your right hand over the Red Sea. Notice that with those two seas covered, it is not hard to see Eurasia and Africa together as a single land mass, and one much bigger than Eurasia alone. Compared to the Atlantic or the Pacific Ocean, the Mediterranean and the Red Seas are merely "lakes." Humans have been shuttling routinely back and forth across them for thousands of years. And it is worth noting that one can *walk* from Africa to Eurasia by crossing the Sinai Peninsula and one of the bridges that spans the Suez Canal.

Because of regular interaction among peoples living around the rims of the Mediterranean and the Red Seas, historical developments in Africa, Asia, and Europe have been intertwined far more intensely than the conventional continental divisions would encourage us to think. In other words, an integrated approach to world history demands that we visualize not only Eurasia as a whole but Africa and Eurasia together (plus adjacent islands or island groups like Japan, the Philippines, and Britain) as a *single space* within which important historical developments have taken place from very early times.

In fact, ancient scholars had no trouble imagining Africa, Asia, and Europe together as constituting a larger interconnected whole. The Romans called it the *Orbis Terrarum*, or "the circle of the world." However, the three-continents scheme, a product of human invention to start with, has become so standardized in schoolbooks as the "right" way to





**MAP 1.2** Major physical and climatic features of Afroeurasia.

What physical features work to connect Afroeurasia as a single geographical unit? Which features support an understanding of this landmass as three continents?

see the world that modern geographers have never settled on a label for all of Africa and Eurasia together. In the sixteenth century the term “Old World” appeared in European languages to distinguish the land masses of the Eastern Hemisphere from the “New World,” that is, the Americas. These terms, however, are vulnerable to criticism because the Americas were only “new” to the Europeans who first visited them, not to the people who had been living there for thousands of years. In this book we adopt the single word

**Afroeurasia** The land masses of Africa and Eurasia, together with adjacent islands, as a single spatial entity.

**Afroeurasia** to express the continuum of lands comprising Africa and Eurasia. It will serve as a convenient geographical tool for discussing large-scale historical developments that cut across the conventionally defined continental boundaries.

Afroeurasia takes up nearly 60 percent of the surface of the earth that is not water. This land mass is not only the biggest one on the planet, it is also where the human species

first evolved (as far as we know), and it has historically been home to most of the humans who have ever lived. Today, about 86 percent of the globe’s population inhabits Afroeurasia. To understand the patterns of migration, settlement, exchange, and conquest that unfolded on this land mass, it helps to know its broad physical and climatological features.

### The Great Arid Zone

A large part of the Afroeurasian land mass is a belt of dry or semidry country that extends all the way from the Atlantic coast of Africa in a generally northeasterly direction to the northern interior of China. This enormous tract, which we refer to as the **Great Arid Zone**, comprises a chain of

**Great Arid Zone** The belt of arid and semiarid land that extends across Afroeurasia from the Sahara Desert in the west to the Gobi Desert in the east. It has been home to both pastoral nomadic communities and to farming societies where sufficient water is available.





**The Great Arid Zone.** Climate in the long band of dry country that stretches across Afroeurasia ranges from extreme year-round aridity to semiarid conditions in which winter rains nourish spring grasses. Dromedaries, or one-humped camels, shown here (left) ambling across the western Arabian Desert, are in several respects biologically better suited to harsh environments than are horses, which for several thousand years have thrived on the grassy steppes of northeastern China.

interconnected deserts, mountains, and semiarid steppes. A steppe may be defined as flat or rolling grassland, equivalent to what Americans call “prairie” and Argentines call “pampas.” The main climatic characteristic of the Great Arid Zone is low annual rainfall, which may range from an average of less than five inches in the bleakest of deserts to twenty inches or so in better watered steppes.

The Sahara Desert, the largest area of intense aridity in the world, constitutes the western end of the Great Arid Zone. The Arabian and the Syrian Deserts, climatological extensions of the Sahara, connect on the east to the Iranian Plateau. A spur of dry country extends eastward from Iran across southern Pakistan to form the Great Indian Desert. North and northeast of Iran lie the steppes that cover a

**Inner Eurasia** The interior land mass of Eurasia, whose dominant features are flat or rolling regions of grassy steppe or forest, interrupted by deserts and highland areas.

significant part of the huge interior region we call **Inner Eurasia**. Rainfall on the grasslands of western Inner Eurasia, that is, the lands roughly north of the Black Sea, is relatively

abundant, as much as twenty inches a year. But further east, Inner Eurasia becomes progressively arid. The Gobi Desert, which overlaps China and Mongolia, marks the eastern end of high aridity, though much of northern China is semiarid.

Old Hollywood stereotypes represent the Great Arid Zone as a hellish sea of sand frequented only by camel nomads and French Foreign Legionnaires. Some sections of the belt are indeed infernal and uninhabited, but the movie image is way off the mark. Densely settled farming populations have inhabited dry lands for thousands of years. In fact, the earliest farming societies arose in the Great Arid Zone or on the margins of it. Aridity does not necessarily mean infertility as long as water for crops and pasture is available from rivers or underground sources. The Tigris-Euphrates, Nile, Indus, and Yellow (Huang He) Rivers, which nourished the earliest civilizations, all flow through parts of

the Great Arid Zone. Indeed, oases supporting farmers and even great cities have sprung up wherever aquifers (areas under the earth’s surface containing significant amounts of water) could be tapped by springs, wells, or underground channels. Moreover, the zone includes highland regions as well as grassy plains. Rainfall and runoff in mountain valleys have nourished farmers from very ancient times.

Where farmers could not make a living in the Great Arid Zone, people found another way to survive. Beginning between four thousand and five thousand years ago, small communities adapted to low precipitation by raising domesticated animals. These stock breeders developed a specialized economy based on herds of sheep, horses, goats, cattle, or camels that could be exploited for meat, milk, blood, hide, and bone. The earliest pastoralists, that is, people whose living depends on pasture, inhabited the semiarid grassy steppes of Inner Eurasia. Stock raisers also adapted long ago to the Sahara, the Arabian Desert, and the Iranian Plateau, in places where seasonal rains and strategically placed wells could keep herds alive. Because herding communities required extensive grazing land, their population densities had to remain low compared to farming societies. Nevertheless, pastoral peoples—hardy, mobile, and often militant—have, as we will see, played a role in world history out of all proportion to their sheer numbers.

## The Tropical Belt

South of the Great Arid Zone a broad belt of tropical or subtropical territory runs across Afroeurasia, straddling the equator. In basic geographical terms, the “tropics” is the region bounded by two latitudinal lines: the Tropic of Cancer on the north and the Tropic of Capricorn on the south. The sun shines from directly overhead at least once a year in all areas between these lines. In the west of Afroeurasia lie the humid grassy or wooded savannas and the equatorial rainforests of Africa south of the Sahara. To the east are



the woodlands and tropical forests of southern India, the Ganges River plain, Southeast Asia, and southern China. In contrast to the Great Arid Zone, the wet tropics have a short annual dry season and rainfall as high as 430 inches a year. Both plant and animal life are luxuriant and vastly diverse. The earliest human societies made their living hunting and foraging on tropical, sometimes wooded grasslands in eastern Africa. Farming and herding peoples settled the tropical zone of both Africa and Eurasia starting about the second millennium B.C.E., though encountering great ecological challenges owing to nutrient-poor soils and a range of tropical diseases.

## The Northern Latitudes of Temperate Climate

Running along the northern tier of the Afroeurasian land mass from the Atlantic to the Pacific is the wide band of temperate climate that was once covered in boreal and deciduous forests. Westerly winds, encircling the earth, blow across northern Eurasia year-round. They create alternating conditions of warm and cold, wet and dry weather, as polar air masses compete for dominance with warm, tropical air. Streaming across the North Atlantic, the westerlies bring high rainfall, mostly in winter, to ocean-facing Europe. But deeper into Eurasia, and especially east of the Ural Mountains, the climate is much drier and winters much colder. From late in the first millennium C.E., the immense hardwood forests of Europe dwindled gradually before the axe and the plow, though east of the Urals and on across Siberia, the taiga, or coniferous forestlands, remained sparsely settled right into modern times.

Sandwiched between the northern forest belt and the Great Arid Zone at the western end of Eurasia is the basin of the Mediterranean Sea, the largest of the “internal” seas of Afroeurasia. Mild, rainy winters and hot summers of almost complete drought characterize the mountains and plains of the Mediterranean basin. Open woodlands once covered much of this temperate region, but in ancient times farmers converted plains and hillsides into wheat fields, olive orchards, and vineyards.

## Afroeurasia’s Mountain Spine

The regularity of the broad east-to-west climatic zones of Afroeurasia is broken partially by the string of mountains that extends across the land mass. Map I.2 (inset) highlights the mountain chain, which begins in the west with the Atlas Mountains of North Africa and extends eastward to the highlands of southwestern China. Afroeurasia’s mountains, where they are high and rugged enough, have frustrated communication between peoples living on either side of their ridges. The Himalaya and Kunlun ranges, for example, were formidable barriers to direct overland communication between China and India. The towering Alps also made travel difficult between the Mediterranean and the forested lands to the north. Indeed, the Alpine wall explains in some



**A high pass in the Himalaya Mountains.** Merchants have carried goods across high Himalayan passes since ancient times. Only in 1986, however, was a route marked out for trekkers across the 19,500-foot Gondogoro Pass in northern Pakistan.

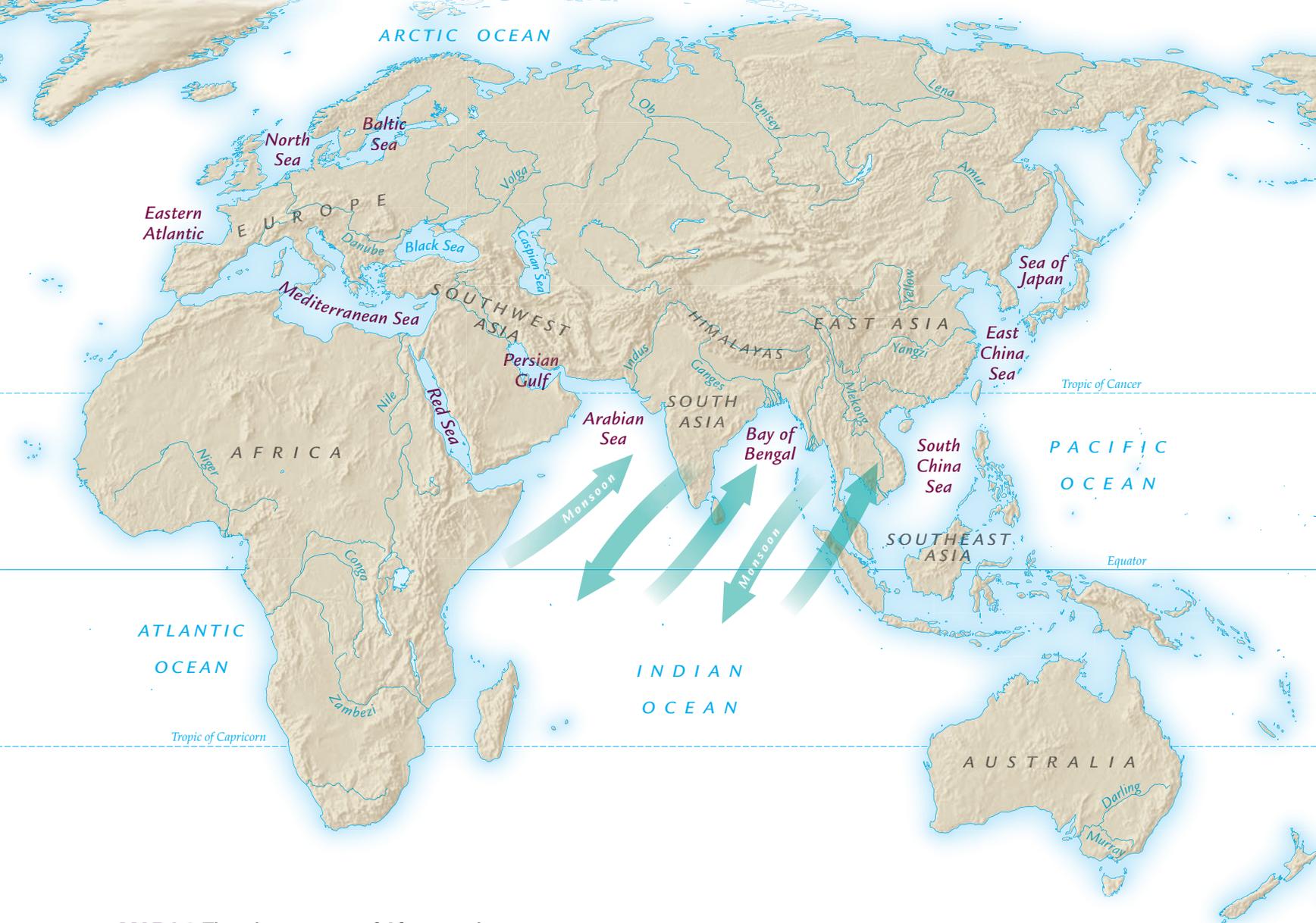
measure the cultural differences that characterized the development of the southern and northern parts of Christian Europe.

By contrast, Afroeurasia’s highland valleys became home to foraging and hunting bands early in human history, later to farmers and herders. The highlands were explored and settled, and ancient trekkers mapped out trails over summer passes. Gaps in even the most foreboding of ranges became channels of slow but regular communication that linked distant peoples in trade. Nomads migrating with their herds and flocks, not to mention great armies of horsemen hell-bent on conquest, also crossed high passes of the Atlas, Carpathians, Zagros, or Hindu Kush at different times in history, appearing suddenly out of the hills and plunging down on unsuspecting villagers in the plain below.

## The Eleven Seas

A chain of seas also links the extremities of Afroeurasia. Map I.3 identifies the sequence of seas, beginning with the





**MAP 1.3** The eleven seas of Afroeurasia.

How might sea traders sailing across the South China Sea, the Bay of Bengal, or the Arabian Sea in premodern times have benefited from knowledge of the seasonal patterns of the monsoon winds?

Sea of Japan (East Sea) at the far northeastern end of the continent and ending with the Baltic in northern Europe. Straits, more or less narrow, connect several of these seas. The Red Sea and the Persian (Arabian) Gulf are parallel water routes between the Mediterranean and the Arabian Sea. The Red Sea links to the Mediterranean by a short landward passage across the Sinai Peninsula, though the Suez Canal now serves as a human-made strait. Communication between the Mediterranean and the Persian Gulf requires a longer overland passage across Iraq and Syria.

Climate and weather on the eleven seas vary drastically owing to their differing latitudes and wind conditions. However, by the first millennium B.C.E., or in some places much earlier, humans were observing and recording seasonal regularities in weather, wind, and current all along the chain. The largest-scale Afroeurasian wind cycle is the Indian Ocean monsoons, a climatological phenomenon in

which the winds over a region reverse direction at particular times of the year. Owing to differences in surface temperature between the Indian Ocean and the Eurasian land mass, winds blow from the northeast in the winter months, passing across Southeast Asia and India toward Africa. Then in the summer months they reverse themselves, blowing from the southwest. In very ancient times, peoples who lived around the rims of the South China Sea, the Bay of Bengal, and the Arabian Sea became aware of the monsoons. Early seafarers soon got the hang of sailing out of port during certain seasons of the year, then back again after the monsoons shifted.

In all the eleven seas, mariners learned how to take advantage of local wind and current to sail out of sight of land with reasonable confidence that they would get where they wanted to go. In time, traders, as well as migrants, pilgrims, and sometimes pirates and seaborne conquerors, regarded

the open waters of the eleven seas, not as fearsome voids but as channels of rapid and, compared to overland transport, inexpensive communication. By the end of the first millennium C.E., the entire four-thousand-mile-long corridor of seas was developing into a single network of trade. Individual merchants, even in modern times, have hardly ever carried a cargo from one end of the chain to the other. Rather, groups of traders commonly handed off their shipments to other groups in the commercial ports that sprang up where two seas meet.

## Rivers

We may also think of Afroeurasia's great rivers as extensions of oceans, narrow corridors of communication leading deep into the interior of the land mass. The mouths of some major rivers, including the Yangzi (YAHNG-zuh) in China, or the Rhine and Danube in Europe, are broad and deep enough to permit oceangoing vessels to sail directly upriver to inland ports. On other rivers, sandbars, marshes, waterfalls, or shallow deltas block entry from the sea to large craft. Beyond such barriers, however, some rivers are navigable for hundreds or even thousands of miles. For example, the lower course of the Congo River drops precipitately over a series of waterfalls between Central Africa's interior plateau and the Atlantic. Travelers must go around these cataracts by land. Above the falls, however, the river and its numerous tributaries open out to form a network of about 8,700 miles of navigable streams that reach a huge part of equatorial Africa. Many of Afroeurasia's secondary rivers are too short, shallow, or steep to permit useful navigation. The streams that flow from the interior of southern India, for example, fall into that category, and among the dozens of watercourses that empty into the Mediterranean only the Nile and the Rhône provide waterborne access to the deep interior. Rivers of course also mean valleys.

Whether navigable or not, a river may guide travelers along overland routes that parallel its banks, especially where the flow has carved broad bottom land.

Humans began communicating with one another along river valleys, whether overland or in canoes, rafts, and sailcraft, several millennia before they ventured onto the deep oceans. Rivers have partly determined the directions that migrants, merchants, and the carriers of new ideas have taken, and they have shaped the geographical distribution of languages and cultural styles. In Afroeurasia's dry lands, river valleys are typically ribbons of fertility, blessing ancient farmers and city builders with both water and rich soil. Afroeurasia's earliest civilizations all arose in river valleys, where sun, soil, and abundant water created ecological conditions where dense populations could flourish even in the most barren parts of the Great Arid Zone.

Unfortunately, rivers are also among the least stable formations on the earth's surface. Depending on the particular topographical, hydrological, or climatic conditions, rivers may flood unpredictably, change their course abruptly, fill with salts that harm crops, and accumulate alluvial silt that clogs irrigation channels, halts shipping, and creates swamps and marshes. For example, northern China's Yellow River has sustained dense populations, great cities, and boundless wheat lands, but over the centuries periodic floods and channel shifts have also caused millions of deaths and economic disasters severe enough to weaken dynasties.

We cannot, however, blame nature alone for the way rivers behave. Humans began thousands of years ago to clear forests upstream, a practice that invariably increased runoff and with it the risk of flooding and erosion. In modern times, governments have conceived more and more ambitious schemes to put rivers to economic use by rechanneling them, lining them with dikes and levees, and stopping them with mammoth dams, all to uncertain long-term effects. As we explore the past in the chapters to come, we will



### Cataracts on the Congo River.

This mighty river and its numerous tributaries form the largest network of navigable waterways in Africa. They have served for millennia as avenues of regional commerce. Ships cannot, however, reach this network from the Congo's Atlantic mouth owing to the presence of thirty-two cataracts, or rapids. The lower course of the river drops nearly 900 feet over a distance of about 220 miles.



notice many interconnections between human history and the ever-changing landscapes of rivers and their valleys.

## Australia

Geographers continue to argue about Australia. Is it the world's smallest continent or its biggest island? Scholars also recognize "Australasia," that is, Australia plus Tasmania, New Zealand, and sometimes New Guinea, as a distinct world region. A hemispheric view that puts Australia at the center gives it the appearance of a lonely island in the midst of a large sea. But if we focus on the northwestern quadrant of this hemisphere, we can perceive the land mass as the biggest island in an archipelago (chain of islands) that stretches from New Zealand to the Philippines. Only short sea passages separate Australia's northern coast from island Indonesia. And the first humans who set foot "down under" perhaps 60,000 years ago almost certainly arrived there in small boats after a quick trip from some island to the north.

Australia is certainly the most uniform of the great land masses (see Map I.4). It lacks many deep coastal indentations or any large internal lakes or seas. It is also the flattest of all the continents. Most of it consists of boundless plateaus and depressions. Like Afroeurasia, it has a distinctive chain of highlands. The Great Dividing Range runs the length of the continent parallel to the eastern coast. These wooded hills, however, have never impeded human communication since few of the ridges rise more than five thousand feet.

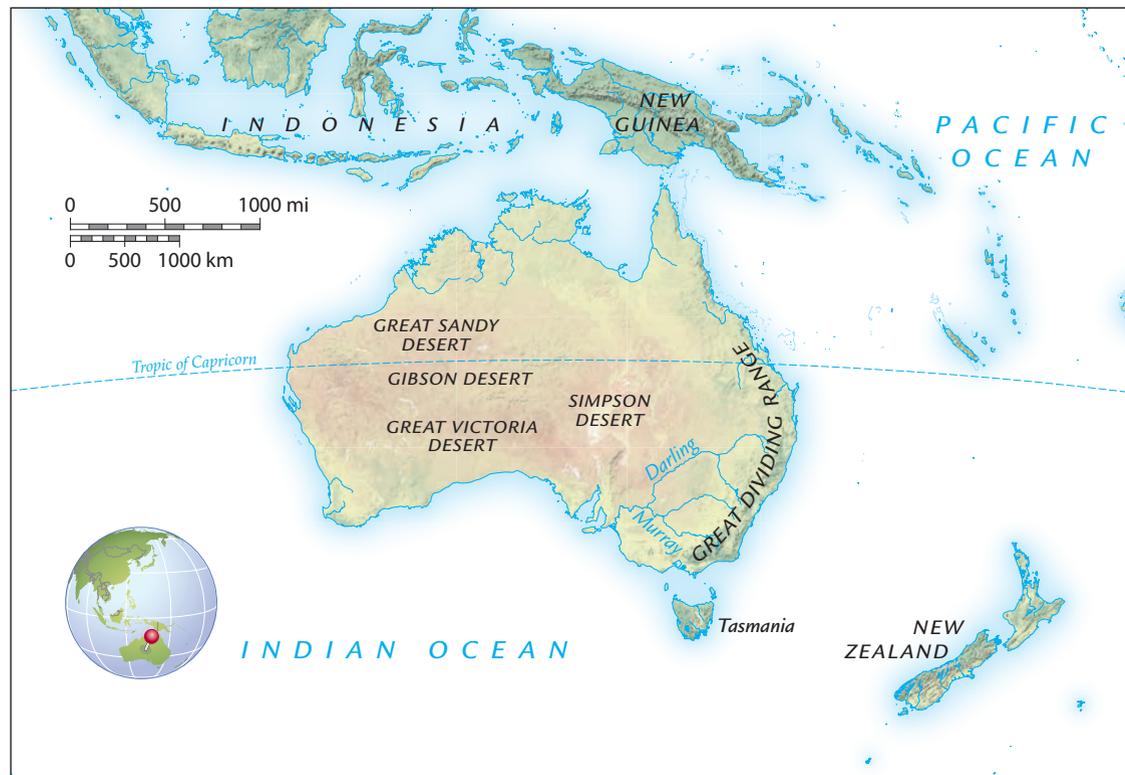
The eastern coastal plains, a narrow strip between the Great Dividing Range and the South Pacific, have adequate water resources because of the southeasterly trade winds that drop Pacific rain as they rise up over the interior hills. But just west of the mountains is the Outback, the uninterrupted dry country that stretches four thousand miles to the Indian Ocean. Australia's own Great Arid Zone of deserts, steppes, and vast fields of sand dunes makes up about two-thirds of the continent. Only the east coast, the far north, and parts of the southern shore receive seasonal rainfall of more than twenty inches a year. Compared to Afroeurasia, Australia is also poor in rivers that may be navigated far inland. The major exception is the Murray River, which originates in the Snowy Mountains of the far southeast and empties into the Indian Ocean.

Australia's distinctive plant and animal life (the eucalyptus tree, the kangaroo, and the duckbilled platypus) is an evolutionary consequence of the continent's physical removal from the once biologically interconnected supercontinent of Gondwanaland (see page I-4). About 200 million years ago, the land masses that are today Australia, Antarctica, Africa, and India went their separate ways. Africa and India moved toward what became Eurasia, but Australia remained farther away. Consequently, the stock of plant and animal life inherited from Gondwanaland continued to evolve along separate lines. In more recent geological ages, however, Australia has exchanged numerous flora and fauna with what is now the Indonesian archipelago.

That exchange included Australia's early human colonization. Throughout almost all of the past 60,000 years,

### MAP I.4 Physical features of Australia.

Look at the composite satellite view of the earth at night on page I-2. What geographical factors might help explain the concentration of light along the southeastern and southwestern coasts of Australia?



however, the continent's aboriginal societies, which remained small and scattered compared to Afroeurasia's population, lived in isolation, even from the peoples of neighboring Southeast Asia. New colonizers introduced themselves to the continent only a little more than two centuries ago. In 1788, English-speaking Europeans arrived in ships to settle the relatively well-watered eastern coast. From that moment, Australia's native population became firmly connected, whether they liked it or not, to the wider human community.

## North and South America

As with any sphere, we can tilt or rotate the globe to get any hemispheric perspective that we like. In other words, we can

**longitude** The imaginary north-south lines that extend between the North Pole and the South Pole and that run perpendicular to lines of latitude. By international agreement the line with a value of 0 degrees, called the Prime Meridian, passes through Greenwich, England.

bisect the planet along any lines of **longitude** we care to choose. The best known bisection is the one that runs through Greenwich, England, and that we call the Prime Meridian. This line serves as the baseline

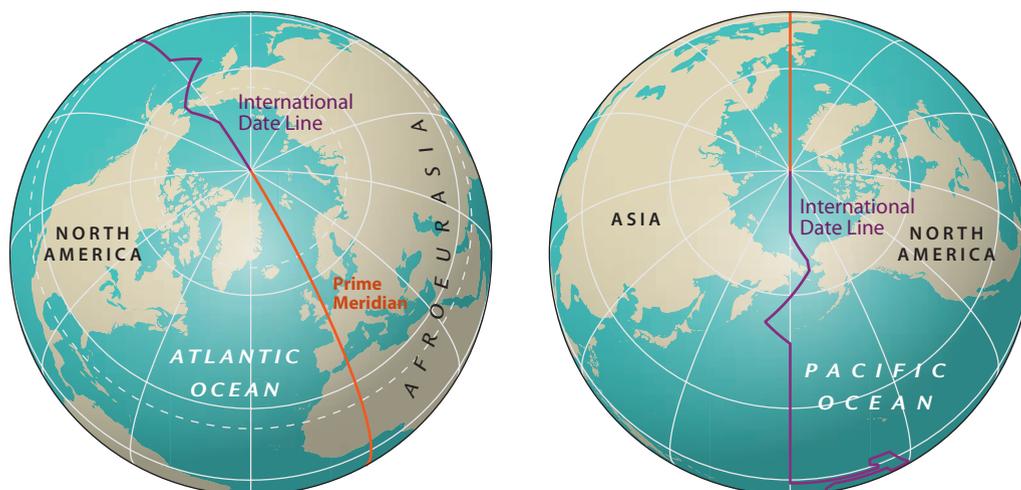
both for measurement of longitude, that is, distances in degrees east or west of that line, and for marking out the world's standard time zones. The line continues around to the Pacific side of the world as the International Date Line. There is nothing "natural" about this line: A conference of nations meeting in 1884 agreed that it should run through Greenwich, a suburb of London. The vote was twenty-two to one, and France abstained.

No matter what line we choose to bisect the planet, however, schoolbook geography and cultural habit make it difficult *not* to think of Afroeurasia as one side of the world and North and South America as the other side. After all, we call them the Eastern and Western Hemispheres. If we turn a globe on its polar axis so that Afroeurasia faces us, the Americas are on the opposite side and disappear from view. But if we tilt and rotate the earth so that we face the North



**The Prime Meridian.** These children in their colorful sneakers are straddling a stretch of the Prime Meridian marked on the ground where it passes through Greenwich, England. The line, which marks 0° longitude and runs from North Pole to South Pole, traverses Greenwich because that is where late nineteenth-century European diplomats and scientists decided it should go. How do you think Britain's status as a major world power in that period might have influenced that decision?

Atlantic Ocean, then Europe, Greenland, and Canada all become visible as an almost continuous arc of land bridging the two conventionally defined hemispheres. If we turn the globe again to focus on the North Pacific Ocean, a crescent of nearly connected land stretches from East Asia across Siberia and Alaska to North America. From these northerly angles shown in Map I.5, it is clear that no long oceanic voyage is required for communication between the northerly reaches of Afroeurasia and North America. Vikings figured out how to sail from Europe to Canada more than a thousand years ago, though the connection did not endure. The



**MAP I.5** Two northerly views of the earth, one focused on the Atlantic (far left) and one on the Pacific.

What factors do you think might have inhibited humans from traveling regularly between Afroeurasia and North America along these ocean rims for thousands of years?



first humans who crossed from Asia to the Americas thousands of years before that may have blazed a water route along the rim of the North Pacific in rafts or canoes

History, however, does lend some support to the Western Hemisphere–Eastern Hemisphere division because for thousands of years the peoples of both Afroeurasia and Australia lived in virtual isolation from societies in the Americas. No group on either side had the technological or organizational skills to set up regular communication across the Atlantic or the Pacific. From about 12,000 B.C.E. until a little more than five hundred years ago, these two particular halves of the planet were indeed separate “worlds.” Only in the late fifteenth century C.E. did European sea captains make transoceanic connections between Afroeurasia and the Americas destined to last. Since that time, advancing transport technology, including air travel over the North Pole, has steadily reduced the historical significance of the physical distinction between the Eastern and Western Hemispheres. In fact, scientists and engineers have formulated plans to dig a sixty-five-mile rail line tunnel under the Bering Strait that would one day link the trans-Siberian railroad to Amtrak.

## Connecting the Americas

In the past century, schoolchildren in the United States and most other countries have learned that the Western Hemisphere has two continents, North America and South America. Only the Isthmus of Panama, just thirty miles across at its narrowest stretch, prevents the complete physical separation of the two land masses. Moreover, the isthmus is an area of dense wet tropical forests and mountains that until recent times has significantly impeded overland commercial and cultural exchange

**Mesoamerica** The region comprising southern Mexico plus the seven small Central American states.

between South America and **Mesoamerica**.

On the other hand, North and South America have

never been completely disconnected historical worlds. As far as we know, human beings first migrated from North to South America 12,000 years ago or more by advancing along either the isthmus or its coastal waters. Climate, vegetation, and cultural styles in the areas surrounding the Panama neck share more similarities than differences. Also, we do not have to strain our imaginations too much to perceive the Gulf of Mexico and the Caribbean as two internal seas of a single American land mass, much the way we have considered the Mediterranean and the Red Seas as “inside” Afroeurasia. The Caribbean and the Gulf are bounded on three sides by land and on the west by a long string of closely clustered islands. We might then think of a line drawn from Florida along this island chain to the far eastern coast of Venezuela as the eastern edge of a single continent. Indeed, we know from archaeological and linguistic evidence that the peoples who settled Caribbean islands thousands of years ago continued to maintain contacts with mainland societies. This unitary continent—North America, Caribbean islands,

and South America together—could be called simply America, though in this book we also use the more conventional plural term, the Americas.

## The Americas’ Long Cordillera

We can also see on a world map that whereas the long axis of Afroeurasia runs about 8,000 miles east to west, the long axis of the Americas runs nearly 11,000 miles north to south. The northern rim of North America lies within the polar region. Tierra del Fuego at the southern tip of South America is only about 600 miles from Antarctica. In both the Eastern and Western Hemispheres, the high mountain spines extend along a long axis, east–west in Afroeurasia, north–south in the Americas. The Americas’ long *cordillera*, or cord, of interconnected ranges extends virtually the entire length of the hemisphere (see Map I.6). It is geologically young and therefore rugged, and it hugs the western side of North and South America. It divides the Americas longitudinally, separating narrow coastal plains on the Pacific side from very broad plains on the eastern side that stretch off toward the Atlantic Ocean. The Appalachian Mountains and the Guyana and Brazilian Highlands of South America interrupt the sweep of the plains on the Atlantic side, but these mountains are much older and more round-topped than the Rockies, Sierra, and Andes ranges.

Most of North America lies in zones of subarctic or temperate climate and shares with Eurasia broad latitudinal bands of tundra, boreal forest, and deciduous forest. Southern Mexico, Central America, and about half of South American regions of Mesoamerica and about half of the continent of South America have tropical or subtropical humid climates similar to Afroeurasia’s equatorial zone. South America bulges out to its widest extent in the equatorial latitudes. The Amazonian rainforest plateaus therefore make up a large portion of that continent’s mass. This is the largest tropical forest ecosystem in the world. The southern quarter of South America lies across temperate latitudes, but the land mass narrows so much at its “southern cone” that both Atlantic and Pacific sea winds reduce the range of temperature and free the region from the extreme winter cold and summer heat that characterize much of temperate North America.

The climate of the Americas is also complicated by the north–south alignment of high mountains, which skews the flow of oceanic winds on the Pacific side and prevents uninterrupted east–west climatic zones. Neither North nor South America, for example, has a latitudinal belt of dry country comparable to Afroeurasia’s Great Arid Zone. Rather, deserts and semiarid prairies lie for the most part in strips running north–south. The starkest of dry lands are found west of the *cordillera* near or bordering the Pacific: the deserts of the southwestern United States and northern Mexico in North America and the coastal deserts of Ecuador, Peru, and Chile in South America. Just east of the *cordillera* are the rain shadows that create long bands of dry or semiarid prairie,



notably the Great Plains that run most of the length of North America just east of the Rockies and the Patagonian steppe of Argentina east of the Andes.

## Rivers and Seas

In Afroeurasia, as we have seen, the eleven seas have for millennia eased human maritime linkage east and west across the region. The Americas have no comparable belt of usable seas to join people north and south. Though Indian mariners almost certainly paddled canoes along stretches of the Pacific and perhaps Atlantic shores thousands of years ago, the great ocean voids did not invite deep-sea exploration in small boats. On the Atlantic side, water routes give easy access to the far interiors of both continents. The Gulf of Mexico links the North American coastal plains and the Mississippi River valley with tropical Mexico. To the north, Hudson's Bay thrusts deep into North America, and just 275 miles south of it the five Great Lakes make up a complex of inland freshwater "seas" that connect extensive areas of forests and plains.

As in Afroeurasia, several great river systems open the interiors of the two Americas. Indeed, Afroeurasia has no network of navigable streams as extensive as the Mississippi and Amazon watersheds, both of which are accessible directly from the sea. From the Atlantic side, numerous other rivers connect the sea to the deep interiors of both continents. Indian migrants and traders used these rivers for long-distance internal communication, and the Europeans who first arrived at the end of the fifteenth century found them an easy way to extend waterborne colonization from the Atlantic to the Great Lakes, the North American plains, and the far interiors of Brazil and Argentina. By contrast, the Pacific side of the Americas is more like Australia in the poverty of its navigable rivers, owing mainly to the sharp drop from mountain to shore nearly the entire length of the land masses. The two major exceptions are the navigable Columbia, which forms part of the border between Oregon and Washington, and, in the far north, Alaska's Yukon.

## The Oceans

Our ancestors may have invented rudimentary watercraft as many as 100,000 years ago and used them to colonize Afroeurasian coastlands and some islands, but human exploration of ocean waters beyond the sight of land is a more recent development. Because of the seasonal regularity of the monsoon winds and the relative serenity of the northern Indian Ocean, valiant mariners of six thousand years ago or more may

**monsoon winds**  
The seasonally reversing winds that governed long-distance sailing in the Indian Ocean and China seas.

ity of the monsoon winds and the relative serenity of the northern Indian Ocean, valiant mariners of six thousand years ago or more may

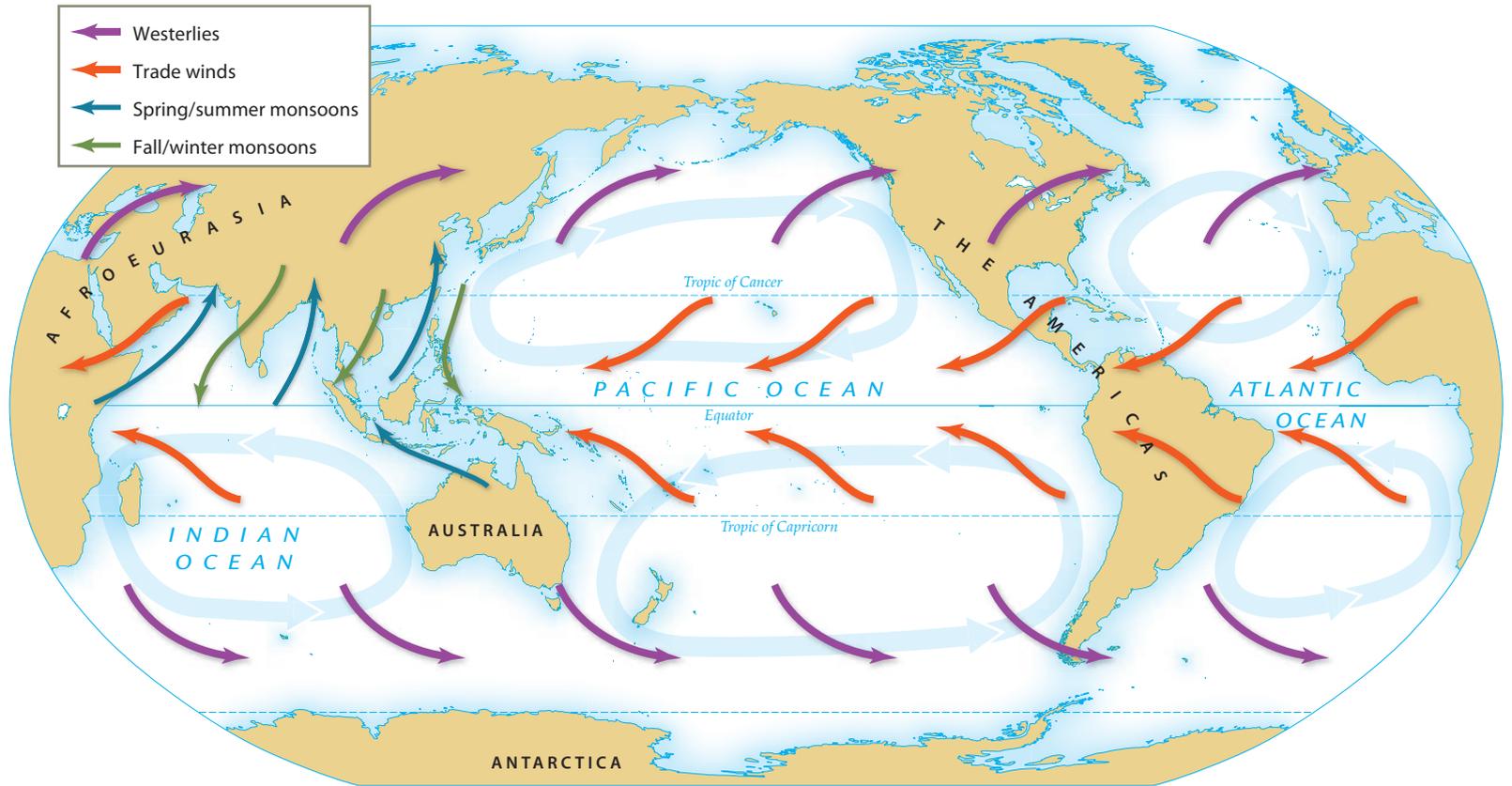


**MAP I.6** Physical features of the Americas.

Drawing an imaginary line between Florida and northeastern South America helps us imagine the Gulf of Mexico and the Caribbean as two seas "inside" a single continent called simply America.

have dared to steer primitive sailboats across open stretches of the Arabian Sea or Bay of Bengal. The Atlantic and the Pacific Oceans, however, are so big that they defied human attempts to make roundtrip open-ocean crossings until a little more than five hundred years ago. The Pacific covers a much greater area than the Atlantic. It is fifteen times larger than the United States, the Atlantic less than six and a half times larger. The Pacific, however, has many more islands than the Atlantic, about 25,000 of them. Between





**MAP I.7 Ocean wind patterns.**

This simplified chart of oceanic winds highlights the giant wind wheels that circulate in the Atlantic and Pacific. Looking at the North Atlantic, what general route do you think Christopher Columbus followed in sailing successfully between Europe and the Caribbean Islands in the late fifteenth century?

about 1600 B.C.E. and 1000 C.E., Polynesian-speaking mariners, moving generally east and northeast from Afroeurasia, colonized many of these islands, collectively called the Island Pacific or Oceania. They reached Rapa Nui (Easter Island) in the vast emptiness of the southeastern ocean, and some Polynesians may even have made landfalls in South America. They did not, however, create a network of sea communication that linked the Pacific's western and eastern rims.

**Oceania (also, the Island Pacific)** The enormous region centered on the tropical Pacific Ocean and its islands. This definition of the region excludes Australia though not New Zealand.

Not until the fifteenth century C.E. did deep-sea explorers gain sufficient technical skill and geographical knowledge to initiate regular travel *back and forth* across the Atlantic and the Pacific. Success came when sailors figured out that, like

the Indian Ocean monsoons, the Atlantic and Pacific winds (and the surface currents driven by those winds) adhere to regular cycles (see Map I.7). Because of a combination of unequal atmospheric pressure and the influence of the earth's rotation, the winds of both the Atlantic and the Pacific flow in a circular, clockwise pattern north of the equator and in the reverse direction south of it. Only in the fifteenth and sixteenth centuries did European navigators begin to map out the Atlantic patterns accurately enough to allow routine roundtrip oceanic voyages. In fact, this four-wheel model of wind and current has numerous local variations and is much more complicated than this introduction suggests. Sea travelers gradually mastered these complexities, however, and by the end of the eighteenth century they were navigating the saltwater passages that connected all the great land masses and most of the world's islands with one another. Only Antarctica remained to be seriously explored.



## Conclusion

This introduction to “big geography”—the large-scale and unifying features of the biosphere—is an important foundation for globe-girdling history. The earth is a single continuum of space, and the events that have mattered most to humankind as a whole have had a cross-cultural or interregional scope. Readers should therefore be ready to range across the whole wide world, considering the achievements,

disasters, and dilemmas of the past in whatever context of *space* is most appropriate—whether that context is Afroeurasia, the Atlantic basin, or the rim lands of the Sahara Desert. It is impossible to look at a globe and see the round earth all at once. But fortunately we can encompass the whole in our minds. This is the starting point for a unified history of humankind.



### Key Terms

Afroeurasia I-7  
biosphere I-4  
Great Arid Zone I-7  
Inner Eurasia I-8

latitude I-6  
longitude I-13  
Mesoamerica I-14  
monsoon winds I-15

Oceania (also, the Island Pacific) I-16  
tectonic plates I-4

