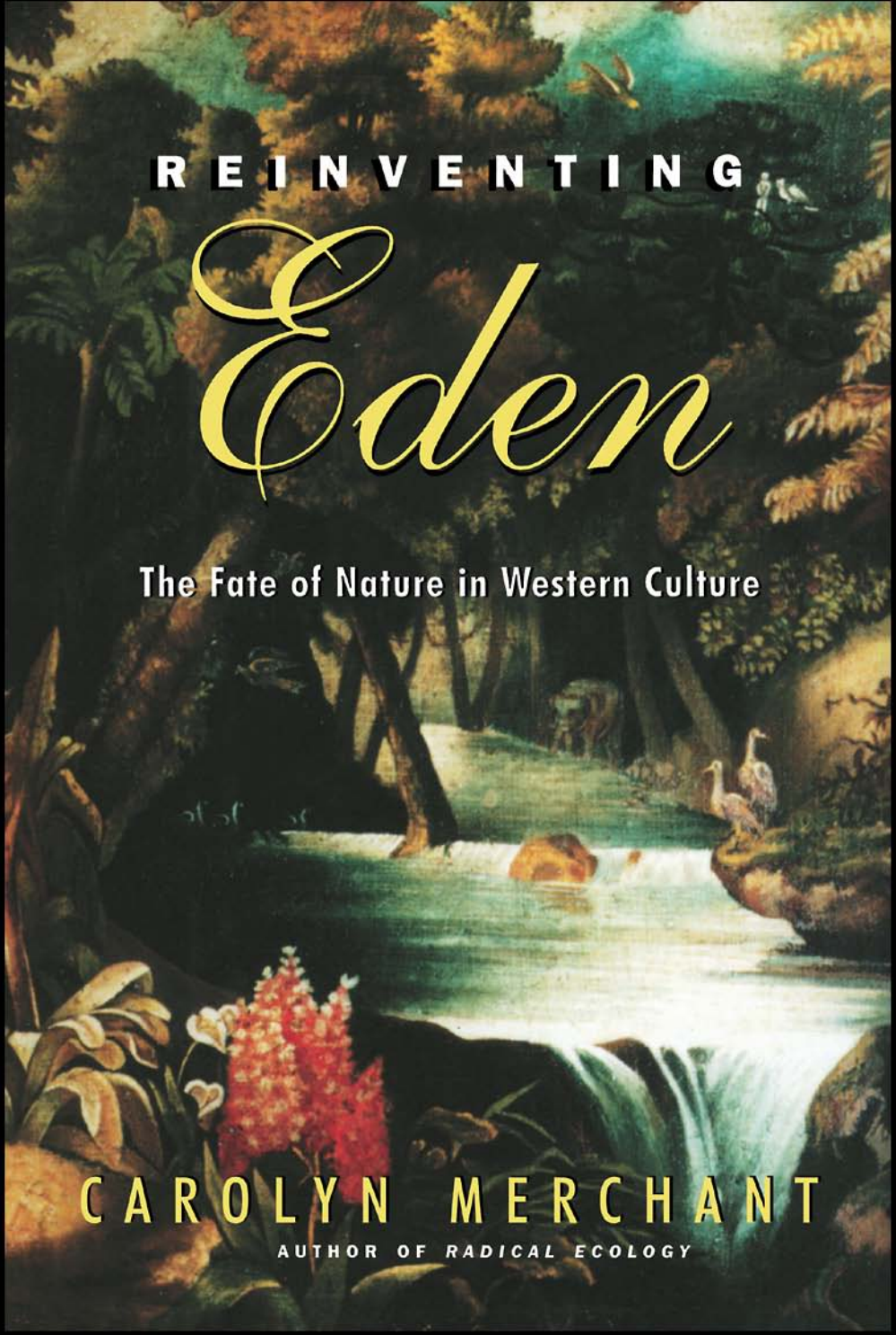

REINVENTING *Eden*

REINVENTING EDEN

The Fate of Nature in Western Culture

CAROLYN MERCHANT

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FOR CHARLIE

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It is a pleasure to acknowledge the many persons and institutions that have supported this work. The ideas behind this book were developed in lectures I gave on the topic "Women and Nature: A Declensionist Narrative?" at John Hopkins University in 1990, in Australia as an ecofeminist scholar in 1991 and at the Fifth Annual Conference on Narrative in Albany New York in 1993. In 1994,1 was a member of a seminar, Reinventing Nature, led by William Cronon at the University of California-Irvine. Cronon had introduced the idea of environmental history as a narrative of decline from a prior pristine state of nature at a session of the American Society for Environmental History in 1987, and the idea became very influential in the field of environmental history and at the Irvine seminar. Some of the ideas that appear here were first developed in my article "Reinventing Eden" for the seminar's published volume, *Uncommon Ground: Rethinking the Human Place in Nature* (1995) that Cronon edited. I am grateful to Bill Cronon and all the members of that seminar for their inspiration, intellectual input, and stimulating conversa tions and to W.W.Norton for allowing me to include materials from the essay throughout the book.

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Berkeley, California
June 2002

ONE
A Garden Planet

LIFE
LIKE A SPIDER
SPINS ITS WEB
IN CYCLICAL MELODIES
TELLING ENIGMATIC, SACRED TALES
To DEAF, DUMB, BLIND ME.

—*Carolyn Merchant, 1998*

A lush garden. Pathways wander invitingly among rolling lawns and fragrant flowers. Lilies, roses, and herbs send forth a sweet ambrosia. The air smells continuously fresh. Peacocks strut among the trees in the near distance and doves make their distinctive three-note coo. A cottontail, appearing unconcerned, nibbles at grass nearby, while lambs suckle at their mother's teat. Nearly hidden among the taller and more distant cedars, a doe and fawn munch at the undergrowth. A small grove of fig trees can be glimpsed down a side path. A couple strolls arm in arm toward a fig grove near the middle of the garden, where a waterfall gushes over rocks fed by a clear bubbling stream. At the garden's very center are two trees known simply as the tree of life and the tree of the knowledge of good and evil.

Where is this Eden? It is not in the Mesopotamian lands of the pre-Christian era. It is the new downtown square on the promenade in Anytown, California. The square is replete with fountains, grassy knolls, meandering streams, and benches for passersby. Along each side of the river flowing through the square are the shops of the revived cityscape. Gracefully arched bridges connect the two sides of the street, and the shops face the greenbelt along the river. The stores are those found in hundreds of towns across the nation: Borders Books, Starbucks Coffee, Cost Plus World Market, Noah's Bagels, Banana Republic, The Gap, Crate and Barrel, and Jamba Juice. This is the new American Eden.[1]

The Garden of Eden story has shaped Western culture since earliest times and the American world since the 1600s. We have tried to reclaim the lost Eden by reinventing the entire earth as a garden. The shopping mall, the "new main street," the gated community, and the Internet are the latest visions of a reinvented Eden. From Christopher Columbus's voyages, to the search for the fountain of youth, to John Steinbeck's *East of Eden,* visions of finding a lost paradise have motivated global exploration, settlement, and hope for a better life.

The Recovery of Eden story is the mainstream narrative of Western culture. It is perhaps the most important mythology humans have developed to make sense of their relationship to the earth. Internalized by Europeans and Americans alike since the seventeenth century, this story has propelled countless efforts by humans to recover Eden by turning wilderness into garden, "female" nature into civilized society, and indigenous folkways into modern culture. Science, technology, and capitalism have provided the tools, male agency the power and impetus. Today's incarnations of Eden are the suburb, the mall, the clone, and the World Wide Web.

As with any mainstream story, however, a counternarrative challenges the plot. Recent postmodern and postcolonial stories reject the Enlightenment accounts of progress. Many environmentalists see the loss of wilderness as a decline from a pristine earth to a paved, scorched, endangered world. Many feminists see a nature once revered as mother now scarred, desecrated, and abused, and women as the victims of patriarchal culture. Similarly, many African Americans and Native Americans see their history as one of colonization by Europeans who "explored," "discovered," and took over their lands and viewed their bodies as animal-like and close to nature. But even as they call for new pathways to a just society, these counterstories of a slide downward (or declension) from Eden buy into the overarching, metanarrative of recovery. Both storylines, whether upward or downward, compel us to find a new story for the twenty-first century.

Narratives form our reality. We become their vessels. Stories find, capture, and hold us. Our lives are shaped by the stories we hear as children; some fade as we grow older, others are reinforced by our families, churches, and schools. From stories we absorb our goals in life, our morals, and our patterns of behavior. For many Americans, humanity's loss of the perfect Garden of Eden is among the most powerful of all stories. Consciously at times, unconsciously at others, we search for ways to reclaim our loss. We become actors in a storyline that has compelled allegiance for millennia.

But "mastering" nature to reclaim Eden has nearly destroyed the very nature people have tried to reclaim. The destruction of nature in America became clearly apparent in the late nineteenth century. The railroad, the steam engine, the factory, and the mine began to demolish forests, blemish landscapes, and muddy the air and water. Romantics reacted sharply. They began to tell a new story of what went wrong—a story of decline from pristine nature. Explorers, writers, poets, and painters proclaimed their love for untouched wilderness. The early conservation movement attempted to redeem both nature and humanity by saving places of pristine beauty.

Yet the new parks, the modern suburbs, and the garden cities reclaimed nature at a cost. These Edenic spaces ostracized those "others" of different classes and colors who did not fit into the story The green veneer became a cover for the actual corruption of the earth and neglect of its poor; that green false consciousness threatened the hoped-for redemption of all people. The middle class appropriated wild nature at the expense of native peoples by carving national parks out of their homelands. The new suburbs existed at the cost of poor minorities who lived with polluted wells, blackened slums, and toxic dumps. Today, many people of color look back to an apparent Edenic past before slavery and colonization changed their lives forever.

The narrative of reinventing Eden, told by progressives as well as environmentalists, raises fundamental questions about the viability of the Recovery Narrative itself. Do not the earth and its people need a new story? What would a green justice for the earth and humanity really look like? Why do people tell stories, and whose ends do they serve? Both the modern progressive and declensionist stories, however compelling, are flawed.

They are products of the linear approach of modern scientific thinking and also reflect the oppositional polarities of *self* and *other*. New kinds of stories, new ways of thinking, and new ethics are required for the twenty-first century.

A narrative approach raises the question of the fit between stories and reality. There is a reality to the progressive story. Great strides have been made in many peoples struggle for survival and ease of life. There is also a reality to the Decline from Eden narrative. The environmental crisis and its connections to overdevelopment, population, consumption, pollution, and scarcity are critical issues confronting all of humanity. Through these contrasting stories, we can see both progress and decline in different places at different times. Progressives want to continue the upward climb to recover the Garden of Eden by

reinventing Eden on Earth, while environmentalists want to recover the original garden by restoring nature and creating sustainability.

The two stories seem locked in conflict. Played out to its logical conclusion, each narrative negates human life: the mainstream story leads to a totally artificial earth; the environmental story leads to a depopulated earth. Pushed to one extreme, the recovered Eden would be a completely reinvented, totally managed, artificially constructed planet in which shopping on the web would replace shopping at the mall, the gated community the urban jungle, and greenhouse farms the vicissitudes of nature's droughts and storms. Pushed to the opposite extreme, the recovery of wilderness implies a humanly depauperate earth. The tensions between the two plots create the need for a new story that entails a sustainable partnership with nature.

We interpret our hopes and fears through such powerful cultural stories. We act out our roles in the stories into which we were born. The American dream holds out a promise, dangling its rewards for those who work hard and are lucky enough to find its treasures. For those who fail, dire consequences may result. These larger stories propel those who act within them to reinvent the planet as a new world garden. Rich and poor alike buy into the mainstream recovery story and act it out over their lifetimes.

The environmental crisis of the 1960s showed that all was not well on the "garden planet." Rachel Carson's *Silent Spring* alerted the nation to the disruptive effects of pesticides on the food chain,[2] while the testing of nuclear weapons raised the specter of the widespread effects of radiation on biotic, especially human, life. In 1967, historian Lynn White Jr.'s classic article "The Historical Roots of our Ecologic Crisis" laid the blame for environmental disruption on an idea: Christian arrogance toward nature. "God…created Adam and, as an afterthought, Eve to keep man from being lonely," White wrote, "Man named all the animals, thus establishing his dominance over them.… Especially in its Western form, Christianity is the most anthropocentric religion the world has seen." White's assessment was, "We shall continue to have a worsening ecologic crisis until we reject the Christian axiom that nature has no reason for existence save to serve man," and the article brought forth cries of criticism over its assignment of the ecological crisis to a single cause. Critics such as Lewis Moncrief responded that a more complex scenario was needed that included capitalism, industrialization, the American frontier, manifest destiny, urbanization, population growth, and property ownership. Others argued that the rise of science and technology contributed to the ability of humanity to

dominate nature and to the idea that mechanistic science promoted the separation of humans from nature.[3]

The complexity of causes leading to environmental degradation as well as efforts to conserve nature and its resources helped to spawn the field of environmental history. In the 1970s and 1980s, an array of books documented the loss of wilderness, the erosion of soils, increased urban pollution, and the decline of biotic diversity. The early successes of environmental history helped to create an overarching narrative of environmental decline as one of the dominant themes in the field. By the mid1980s, Donald Worster, William Cronon, and others identified the plots of many environmental histories as "declensionist." Cronon compared two different narratives by two different authors about the 1930s Dust Bowl of the Great Plains, both with virtually the same title *(The Dust Bowl* and *Dust Bowl),* and both published in the same year (1979)—one a story of progress, the other a story of decline. Cronon wrote, "Although both narrate the same broad series of events with an essentially similar cast of characters, they tell two entirely different stories. In both texts, the story is inextricably bound to its conclusion, and the historical analysis derives much of its force from the upward or downward sweep of the plot." The question raised was one of the fit between stories and reality. How accurately did these or any histories fit the events in question? Who were the characters in the stories? Who was omitted? Was all environmental history declensionist history? And even if that were the case, did this insight in any way undercut the value of environmental history's insights into historical change?[4]

By the 1990s, chaos and complexity theory further challenged ecology and environmental history. The new approaches disrupted the idea of a balance of nature that humans could destroy but also restore. Humanity was not the only major disturber of an evolved prehuman ecosystem. Natural disturbances, such as tornadoes, hurricanes, fires, and earthquakes could in an instant wipe out an old-growth forest, demolish a meadow, or redirect the meander of a river. Humanity was less culprit and more victim; nature more violent and less passive. Environmental history moved away from assigning all destructive change to humans and toward chance and contingency in nature.[5]

My own view is that both progressive and declensionist stories reflect real world history, but from different perspectives. Both open windows onto the past, but they are only partial windows depending on the characters included and omitted. The linearity of the upward and downward plots also masks contingencies, meanderings, crises, and punctuations. Including nature and its climatic and biotic manifestations, however, adds complexity and contingencies to the unidirectional plots

of progress and decline. Droughts, freezes, "little ice ages," domesticated animals and plants, invasive nonnative species, bacteria, viruses, and humans are all actors who are often unpredictable and unmanageable. They inject uncertainties into the trajectories of progress and decline. As environmental historian Theodore Steinberg argues, "it is quite simply wrong to view the natural world as an unchanging backdrop to the past. Nature can upset even the best-laid, most thoroughly orchestrated plans…. We must acknowledge the unpredictability involved in incorporating nature into human designs and, in so doing, bring natural forces to the fore of the historical process."[6]

My view is that the new sciences of chaos and complexity not only reinforce the role of natural forces in environmental history, they also challenge humanity to rethink its ethical relationship to nature. The new sciences suggest that we should consider ourselves as partners with the nonhuman world. We should think of ourselves not as dominant over nature (controlling and managing a passive, external nature) or of nature as dominant over us (casting humans as victims of an unpredictable, violent nature) but rather in dynamic relationship to nature as its partner. In the following pages I present a new perspective on the history of humanity's relationship to nature. I draw on the framework of progressive and declensionist plots, on the roles of men and women in transforming and appreciating the environment, on ideas of contingency and complexity in history, of nature as an actor, and of humanity as capable of achieving a new ethic of partnership with the nonhuman world.

In *Reinventing Eden,* I begin by naming the powerful, overarching story of modern history as a Recovery Narrative. I show how the new millennium presents a major turning point for both the progressive Enlightenment stories and the counternarratives told by women, minorities, and nature itself. I look at the origins of the Recovery Narrative as it arose through biblical, ancient, and medieval history and then set out its political and environmental codification during the Scientific Revolution and European Enlightenment. I focus on the role of Christianity in the formation of the Recovery Narrative and do not attempt to include the influence of Judaism or the Hebrew interpretation of the Genesis stories. Although I am aware that a very large and important literature on biblical interpretation exists, my goal is not to reinterpret biblical scholarship, to write a history of religion, or to examine the development of religious movements, denominations, and sects; nor do I attempt to review or assess the vast literature on Eden in Western culture or Edenic ideas in other cultures and throughout the world.[7]

I then examine the impact of the mainstream Recovery Narrative as it comprises European culture's development and transformation of the New World. American stories—from John Winthrop's Puritan garden to Thomas Hart Benton's manifest destiny—follow and re-create the progressive Recovery storyline. This powerful story of reclaiming and redeeming a fallen earth by human labor becomes the major justification for the westward movement and the effort to remake indigenous Americans in the image of European culture. Eastern wilderness and western deserts are turned into gardens for American settlers.

Throughout the ensuing chapters, I also examine the second story, or what went wrong—the story of Earth in decline. From Plato to Henry David Thoreau, writers have noted the destruction of nature and the problems of vanishing forests and fouled waters. I set out the nineteenth century origins of the romantic counternarrative, the conservation movement, and the late-twentieth-century narratives of environmental crisis. The effects of development on nature, women, and minorities are part of a larger counterstory of the loss of an evolved, earthly abundance and human equality. Despite nuances, hopeful advances, and upward trends, these counternarratives of decline and loss relate the all-too-real experiences of large numbers of people. The continued downward spiral leads to an impoverished earth where diversity is decreasing and environmental health is declining. This also is a story in which we live. It too affects our lives. Over time the Recovery Narrative with its two storylines—one of progress, the other of decline—has shaped the earth's landscape as well as human hopes, desires, and lives.

Within the broad arc of the Recovery Narrative, nature itself has played a major role in affecting outcomes. Despite the efforts of humans to control the natural world, contingencies and crises have occurred. Lurches, advances, and dips disrupt the apparent linearity of the narrative. Natural disturbances inject unpredictability and question the foundations of the narrative within the trajectory of modernity itself. From Noah's flood in Genesis 7 to the volcanic destruction of Pompei during the Roman Empire (C.E. 79), to the Lisbon earthquake of 1755 and Hurricane Gilbert in 1988, nature has shaped human actions and limited possibilities. Nature's actions along with new sciences that incorporate contingencies and complexities into their very assumptions suggest new ways for humanity to relate to the material world.[8]

Since the 1960s, I have witnessed enormous contention within the trajectories of progress and decline. Developers and wilderness advocates are in continual conflict. One group presses for ever greater profits at the earth's expense; the other struggles to save what remains of wilderness on the planet. In the final chapters of the book, I explore

possibilities for new narratives about nature. I examine new ways of thinking about the human-nature relationship suggested by postmodern and postcolonial thinking, as well as the implications of recent theories of chaos and complexity I offer some new ways to think about a multiplicity of stories and introduce ideas about nonlinear plots.

Throughout the book, I suggest possibilities for alternatives to domination based on a partnership between humanity and nature. Finally, I propose an environmental ethic based on a partnership between humans and the nonhuman world: rather than being either dominators or victims, people would cooperate with nature and each other in healthier, more just, and more environmentally sustainable ways. I show how complex inter-connections can weave us into cyclical melodies and envelop us within new enigmatic, sacred tales.

PART I

Genesis of the Recovery Narrative

TW0
The Fall from Eden Eden

> SHE HAS TAKEN UP WITH A SNAKE NOW. THE OTHER ANIMALS ARE GLAD, FOR SHE WAS ALWAYS EXPERIMENTING WITH THEM AND BOTHERING THEM; AND I AM GLAD, BECAUSE THE SNAKE TALKS, AND THIS ENABLES ME TO GET A REST. SHE SAYS THE SNAKE ADVISES HER TO TRY THE FRUIT OF THAT TREE, AND SAYS THE RESULT WILL BE A GREAT AND FINE AND NOBLE EDUCATION…. I ADVISED HER TO KEEP AWAY FROM THE TREE. SHE SAID SHE WOULDN'T. I FORSEE TROUBLE. WILL EMIGRATE.
>
> *—Mark Twain, "Extracts from Adam's Diary"*

Two grand historical narratives explain how the human species arrived at the present moment in history. Both are Recovery Narratives, but the two stories have different plots, one upward, the other downward. The first story is the traditional biblical narrative of the fall from the Garden of Eden from which humanity can be redeemed through Christianity. But the garden itself can also be recovered. By the time of the Scientific Revolution of the seventeenth century, the Christian narrative had merged with advances in science, technology, and capitalism to form the main-stream Recovery Narrative. The story begins with the precipitous fall from Eden followed by a long, slow, upward attempt to recreate the Garden of Eden on earth. The outcome is a better world for all people. This first story—the mainstream Recovery Narrative—is a story of upward progress in which humanity gains the power to manage and control the earth.

The second story, also a Recovery Narrative, instead depicts a long, slow decline from a prehistoric past in which the world was ecologically

more pristine and society was more equitable for all people and for both genders. The decline continues to the present, but the possibility and, indeed, the absolute necessity of a precipitous, rapid Recovery exists today and could be achieved through a sustainable ecology and an equitable society. This second story is one told by many environmentalists and feminists.

Both stories are enormously compelling, and both reflect the beliefs and hopes of many people for achieving a better world. They differ fundamentally, however, on who and what wins out. In the mainstream story, humanity regains its life of ease at the expense of the earth; in the environmental story, the earth is both the victim of exploitation and the beneficiary of restoration. Women play pivotal roles in the two stories, as cause and/or victims of decline and, along with men, as restorers of a reclaimed planet. But, I argue that a third story, one of a partnership between humanity and the earth and between women and men, that draws on many of the positive aspects of the two stories is also emerging. In this chapter I develop, compare, and critically assess the roots and broad outlines of these stories.

THE CHRISTIAN NARRATIVE

The Christian story of Fall and Recovery begins with the Garden of Eden as told in the Bible. The Christian story is marked by a precipitous fall from a pristine past. The initial lapsarian moment, or loss of innocence, is the decline from garden to desert as the first couple is cast from the light of an ordered paradise into a dark, disorderly wasteland to labor in the earth. Instead of giving fruit readily, the earth now extracts human labor. The blame for the Fall is placed on woman.

The biblical Garden of Eden story has three central chapters: Creation, temptation, and expulsion (later referred to as the Fall). A woman, Eve, is the central actress, and the story's plot is declensionist (a decline from Eden) and tragic. The end result is a poorer state of both nature and human nature. The valence of woman is bad; the end valence of nature is bad. Men become the agents of transformation. After the Fall, men must labor in the earth, to produce food. They become the earthly saviors who strive, through their own agricultural labor, to re-create the lost garden on earth, thereby turning the tragedy of the Fall into the comedy of Recovery. The New Testament adds the Resurrection —the time when the earth and all its creatures, especially humans, are reunited with God to recreate the original oneness in a heavenly paradise. The biblical Fall and Recovery story has become the

mainstream narrative shaping and legitimating the course of Western culture.

The Bible offers two versions of the Christian origin story that preceded the Fall. In the Genesis 1 version, God created the land, sea, grass, herbs, and fruit; the stars, sun, and moon; and the birds, whales, cattle, and beasts, after which he made "man in his own image…male and female created he them." The couple was instructed "to be fruitful and multiply, replenish the earth, and subdue it," and was given "dominion over the fish of the sea, the fowl of the air, and over every living thing that moveth on the face of the earth." This version of creation is thought to have been contributed by the Priestly school of Hebrew scholars in the fifth century B.C.E. These scholars edited and codified earlier material into the first five books (or Pentateuch) of the Old Testament, adding the first chapter of Genesis.[1]

The alternative Garden of Eden story of creation, temptation, and expulsion (Genesis 2 and 3) derives from an earlier school. Writers in Judah in the ninth century B.C.E. produced a version of the Pentateuch known as the J source, *The Book of J,* or the Yahwist version (since Yahweh is the Hebrew deity). These writers recorded the oral traditions embodied in songs and folk stories handed down through previous centuries. In addition to the Garden of Eden story, these records include the heroic narratives of Abraham, Jacob, Joseph, and Moses; the escape from Egypt; and the settlement in the promised land of Canaan.[2]

In the Genesis 2 story, God first created "man" from the dust. The name Adam derives from the Hebrew word *adama,* meaning earth or arable land. *Adama* is a feminine noun, meaning an earth that gives birth to plants. God then created the Garden of Eden, the four rivers that flowed from it, and the trees for food (including the tree of life and the tree of the knowledge of good and evil in the center). He put "the man" in the garden "to dress and keep it," formed the birds and beasts from dust, and brought them to Adam to name. Only then did he create "the woman" from Adam's rib: "And Adam said, This is now bone of my bones, and flesh of my flesh: she shall be called Woman, because she was taken out of man."[3]

Biblical scholar Theodore Hiebert argues that the Yahwist's Eden narrative is told from the perspective of an audience outside the garden familiar with the post-Edenic landscape. The use of the word *before* in the phrases that described God making "every plant of the field before it was in the earth," and "every herb of the field before it grew" signify the pasturage and field crops of the post-Edenic cultivated land in which the listener is situated. Similarly, the phrases that note that "God had not caused it to rain upon the earth" and that "a mist from the earth"

came that "watered the whole face of the ground" indicate a post-Edenic rain-based agriculture centered on cultivation of the adama, or arable land.[4]

The Garden of Eden described in Genesis 2, however, is a different landscape from that of the post-Edenic *adama;* it is filled with spring-fed water out of which the four rivers flow. It contains the "beasts of the field," "fowls of the air," cattle, snakes, and fruit trees, including the fig, as well as humans "to dress and keep it." The image of the garden in which animals, plants, man, and woman live together in peaceful abundance in a well-watered garden is a powerful image; it provides the starting and ending points for both plots of the overarching Recovery Narrative.

Hiebert compares the garden to a desert oasis irrigated by springs. "The term 'garden' *(gan),*" he notes, "is itself the common designation in biblical Hebrew for irrigation-supported agriculture." Irrigation agriculture was typified by the river valley civilizations of Mesopotamia and Egypt, in which rivers overflowed onto the land and water was channeled into ditches running to fields. Of the four rivers mentioned in Genesis 2, two are the Tigris (Hiddekel) and Euphrates of Mesopotamia, while the Pison and Gihon "are placed by the Yahwist south of Israel in the area of Arabia and Ethiopia (2:11–13), and have been identified by some as the headwaters of the Nile," notes Hiebert. The Edenic landscape is thus spring-fed, river-based, and irrigated, whereas the post-Edenic landscape initiated by the temptation is rain-based. Irrigation itself later becomes a technology of humanity's hoped-for return to the garden.[5]

Genesis 3 begins with "the woman's" temptation by the serpent and the consumption of the fruit from the tree of the knowledge of good and evil. (In the Renaissance this fruit became an apple, owing to a play on the Latin word bad, or *malum,* which also means apple). The story details the loss of innocence through the couple's discovery of nakedness followed by God's expulsion from the garden of Adam and his "wife," whom he now calls Eve, because she is to become "the mother of all the living." Adam is condemned to eat bread "in the sweat of thy face," and is "sent forth from the garden of Eden, to till the ground (the *adama* or arable land) from whence he was taken," the same *adama* to which he will return after death. But because Adam has listened to his wife, the *adama* was cursed. Thorns and thistles would henceforth grow in the ground where the "herb of the field" (field crops) must be grown for bread. After the couple's expulsion, God places "at the east of the garden of Eden" the cherubim and flaming sword to guard the tree of life.[6]

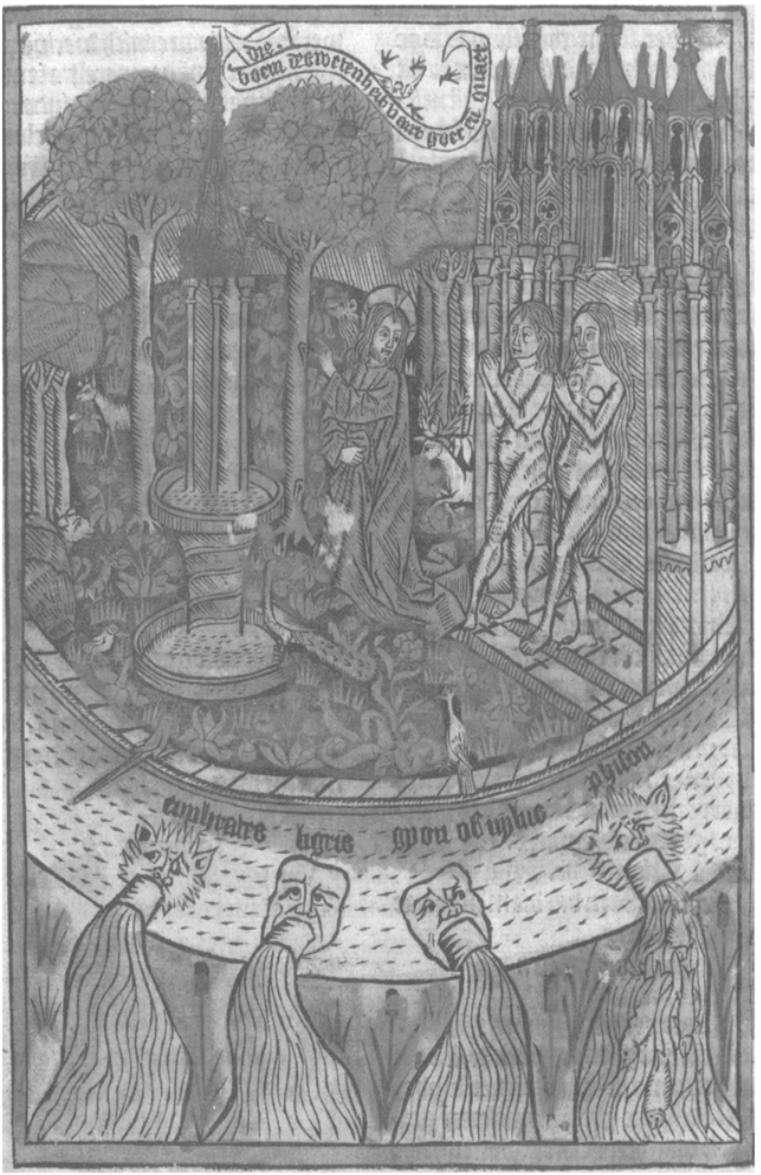

Fig. 2.1. Adam and Eve enter the enclosed, circular Garden of Eden in lockstep. The Tree of Life and the Tree of the Knowledge of Good and Evil are at the center of the Garden, watered by a fountain, while the four rivers flow from the Garden. Ludolphus de Saxonia, *Vita Christi* (Antwerp, Gerard Leeu, 1487). Courtesy of the Huntington Library, San Marino, California

The landscape into which Adam and Eve are expelled is described by Evan Eisenberg in *The Ecology of Eden.* By 1100 B.C.E. the Israelites were farming the hills of Judea and Samaria in Canaan with ox-drawn scratch plows and planting wheat, barley, and legumes such as peas and lentils. They pastured sheep, goats, and cattle, and grew grapes in vineyards, olives on hillside groves, and figs, apricots, almonds, and pomegranates in orchards. "Where least disturbed," Eisenberg notes, "the landscape was [a] sort of open Mediterranean woodland…with evergreen oak, Aleppo pine, and pistachio…. Elsewhere this would dwindle to…a mix of shrubs and herbs such as rosemary, sage, summer savory, rock rose, and thorny burnet. The settlers cleared a good deal of this forest for pasture and cropland." They captured water in cisterns and terraced the land to retain the rich, but shallow red soil for planting, using the drier areas for pasturage. The arid hill country in which arable and pasturage lands was mingled was therefore the landscape that would be inhabited by the descendants of Adam and Eve.[7]

Genesis 4 recounts the fate of Adam and Eve's sons, Abel ("keeper of sheep"—a pastoralist) and Cain ("tiller of the ground"—a farmer). God accepts Abel's lamb as a first fruit, but rejects Cain's offering of the "fruit of the ground," grown on the *adama.* Although the seminomadic pastoralists and farmers of the Near East often existed in mutual support, they also engaged in conflict. Cain's killing of Abel may represent both that conflict and the historical ascendancy of settled farmers over nomadic pastoralists. A second explanation stems from the fact that Israelite farms in the hill country incorporated both farming and pastoralism into a subsistence way of life. According to Hiebert, the elder son was responsible for the tilling of the land, whereas the younger son was the keeper of the sheep. Hiebert argues that God's banishment of Cain after the killing of Abel represents a prohibition against settling disputes through the killing of kin.[8]

When human beings fell into a more labor-intensive way of life, their view of nature reflected this decline. Nature acting through God meted out floods, droughts, plagues, and disasters in response to humanity's sins or bountiful harvests in response to obedience. J.L.Russell notes that the Christian interpreter Paul "regarded the whole of nature as being in some way involved in the fall and redemption of man. He spoke of nature as "groaning and travailing" (Romans 8.22) —striving blindly towards the same goal of union with Christ to which the Church is tending, until finally it is re-established in that harmony with man and God which was disrupted by the Fall." While the term *fall* to characterize the expulsion or going forth from Eden is absent from the Bible, it becomes commonplace in the ensuing Christian tradition.

Fig. 2.2. In the background Eve, tempted by the serpent, holds the apple from the Tree of the Knowledge of Good and Evil as Adam looks on. In the foreground Adam and Eve, having tasted the fruit, are expelled from the Garden, no longer in lockstep, leaving the angel with the flaming sword to guard the Tree of Life. *Adam and Eve with a Serpent* from *Heures a I'usage de Rome,* 1488 by J.J.de Pré. Reproduced in *The Garden of Eden* by John M.Prest, 1982 and originally from *Medieval Gardens* by Sir Frank Crisp, 1924. Reference (shelfmark) 19183 d.26.

Beginning with St. Augustine, the story is interpreted as a Fall that can be undone by a savior.[9]

Before the Fall, nature was an entirely positive presence. The garden, which is the beginning and end of the Recovery Narrative, is an idealized landscape. The beasts and herbs of Genesis 1 are described as

"very good," as are the cattle, fowl, beasts, and trees in the Genesis 2 Garden of Eden. The dust of Genesis 2, from which "man" was formed and which was watered by "a mist from the earth," is positive in valence. The ground, from which the other creatures are made is positive as well. But after the couple disobeys God, the ground is cursed. Adam eats of it in sorrow, and it brings forth thorns and thistles. The serpent changes from being "more subtle" than the other beasts to being "cursed above all cattle and above every beast of the field." In the Christian tradition, the thorns, thistles, and serpent symbolize barren desert and infertile ground, a negative nature from which humanity must recover to regain the garden.[10]

With the Fall from Eden, humanity abandons an original, "untouched" nature and enters into history. Nature is now a fallen world and humans fallen beings. But this Fall through the lapsarian moment sets up the opposite—or Recovery—moment. The effort to recover Eden henceforth encompasses all of human history. Reattaining the lost garden, its life of ease from labor, and its innocent happiness (and, I would add, the potential for human partnership with the earth) become the primary human endeavor. The Eden narrative is, according to Henry Goldschmidt, "a story of originary presence which is subsequently usurped by difference; and then of a final presence, reinstituted, sweeping away the unfortunate misadventure."[11]

The Recovery story begins with the Fall from the garden into the desert (and the loss of an original partnership with the land), moves upward to the re-creation of Eden on earth (the earthly paradise), and culminates with the vision of attainment of a heavenly paradise, a recovered garden. Paradise is defined as heaven, a state of bliss, an enclosed garden or park—an Eden. Derived from a Sumerian word, *paradise* was once the name of a fertile place that had become dry and barren; the Persian word for park, or enclosure, evolves through Greek and Latin to take on the meaning of garden, so that by the medieval period Eden is depicted as an enclosed garden. The religious path to a heavenly paradise, practiced throughout the early Christian and medieval periods, incorporated the promise of salvation to atone for the original sin of tasting the forbidden fruit. In the Christian story, time has two poles—beginning and end, creation and salvation.[12]

The resurrection or end drama, heralded in the New Testament, envisions an earth reunited with God when the redeemed earthly garden merges into a higher heavenly paradise. The second coming of Christ was to occur either at the outset of the thousand-year period of his reign of peace on earth, as foretold in Revelation 20 (the millennium), or at the last judgment, when the faithful were reunited with God at the

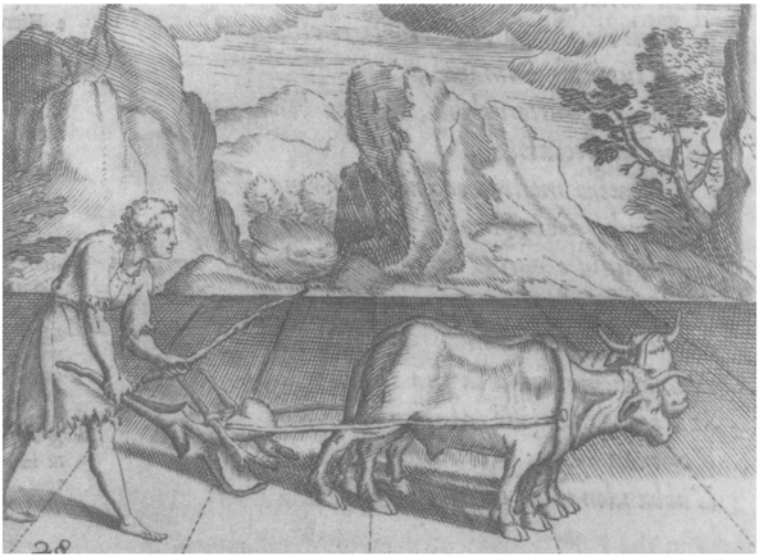

Fig. 2.3. After the expulsion from Eden, Adam is forced to till the barren ground with plow and oxen. G.B.Andreini. "Adamo," *L'Adamo, Sacra Rapresentatione* (Milan, 1617), p. 110. Courtesy of the Huntington Library, San Marino, California

resurrection. Since medieval times, millenarian sects have awaited the advent of Christ on earth.[13]

The Parousia is the idea of the end of the world, expressed as the hope set forth in the New Testament that "he shall come again to judge both the quick and the dead." It depicts a redeemed earth and redeemed humans. "The scene of the future consummation is a radically transformed earth," writes A.L.Moore. *Parousia* derives from the Latin *parere,* meaning to produce or bring forth. Hope for Parousia was a motivating force behind the Church's missionary work, both in its early development and in the New World; Christians prepared for this expected age of glory when God would enter history Moore notes, "The coming of this Kingdom was conceptualized as a sudden catastrophic moment, or as preceded by the Messianic kingdom, during which it was anticipated that progressive work would take place."[14]

THE MODERN NARRATIVE

A secular version of the Recovery story became paramount during the Scientific Revolution of the seventeenth century, one in which the earth

Fig. 2.4. After the Fall, nature becomes a disorderly wilderness in which animals, who once lived in harmony, devour each other, while Adam and Eve are forced to live in caves and clothe themselves in skins. G.B.Andreini. "Eua, Adamo," *L'Adamo, Sacra Rapresentatione* (Milan, 1617), p. 115. Courtesy of the Huntington Library, San Marino, California

itself became a new Eden. This is the mainstream narrative of modern Western culture, one that continues to this day—it is *our* story, one so compelling we cannot escape its grasp. In the 1600s, Europeans and New World colonists began a massive effort to reinvent the whole earth in the image of the Garden of Eden. Aided by the Christian doctrine of redemption and the inventions of science, technology, and capitalism, the long-term goal of the Recovery project has been to turn the entire earth into a vast cultivated garden. The seventeenth-century concept of Recovery came to mean more than Recovery from the Fall. It also entailed restoration of health, reclamation of land, and recovery of property. The strong interventionist version in Genesis 1 validates Recovery through domination, while the softer Genesis 2 version advocates dressing and keeping the garden through human management (stewardship). Human labor would redeem the souls of men and women, while the earthly wilderness would be redeemed through cultivation and domestication.[15]

The Garden of Eden origin story depicts a comic or happy state of human existence, while the Fall exemplifies a tragic state. Stories and

TABLE 2.1. REINVENTING EDEN: NARRATIVES OF WESTERN CULTURE

Christian	Modern	Environmentalist	Feminist
Eden	Golden Age	Pristine Wilderness	Matriarchy or Equality
Fall	Dark Ages	Ecological Crisis	Patriarchy
Birth of Christ	Renaissance	Environmental Movement	Feminist Movement
Heaven	Capitalism	Restored Earth	Emancipation, Equality

descriptions about nature and human nature told by explorers, colonists, settlers, and developers present images of and movement between comic (positive) or tragic (negative) states. Northrop Frye describes the elements of these two states. In comic stories, he notes, the human world is a community and the animal world comprises domesticated flocks and birds of peace. The vegetable world is a garden or park with trees, while the mineral world is a city or temple with precious stones and starlit domes. And the unformed world is depicted as a river. In tragic stories, the human world is an anarchy of individuals and the animal world is filled with birds and beasts of prey (such as wolves, vultures, and serpents). The vegetable world is a wilderness, desert, or sinister forest, the mineral world is filled with rocks and ruins, and the unformed world is a sea or flood. All of these elements are present in the two versions of the Recovery Narrative.[16]

The plot of the tragedy moves from a better or comic state to a worse or tragic state (from the Garden of Eden to a desert wilderness). The comedy, on the other hand, moves from an initial tragic state to a comic outcome (from a desert to a recovered garden). Thus, the primary narrative of Western culture has been a precipitous, tragic Fall from the Garden of Eden, followed by a long, slow, upward Recovery to convert the fallen world of deserts and wilderness into a new earthly Eden. Tragedy is turned into comedy through human labor in the earth and the Christian faith in redemption. During the Scientific Revolution, the Christian and modern stories merged to become the mainstream Recovery Narrative of Western culture (see table 2.1).

THE ROLE OF GENDER

The way in which gender is encoded into the mainstream Recovery Narrative is crucial to the structure of the story. In the Christian tradition, God—the original oneness—is male, while in the garden the woman (Eve) is subordinate to the man (Adam). The fall from the garden is caused by the woman, Eve; Adam is the innocent bystander, forced to pay the consequences as his sons, Abel and Cain, are constrained to develop pastoralism and farming. While fallen Adam becomes the inventor of the tools and technologies that will restore the garden, fallen Eve becomes the nature that must be tamed into submission. In much of the imagery of Western culture, Eve is inherently connected to and associated symbolically with nature and the garden. In the European and American traditions, male science and technology mitigate the effects of fallen nature. The good state that keeps unruly nature in check is invented, engineered, and operated by men, and the good economy that organizes the labor needed to restore the garden historically has been male directed.

In Western culture, nature as Eve appears in three forms. As original Eve, nature is virgin, pure, and light—land that is pristine or barren but has the potential for development. As fallen Eve, nature is disorderly and chaotic; a wilderness, wasteland, or desert requiring improvement; dark and witchlike, the victim and mouthpiece of Satan as serpent. As mother Eve, nature is an improved garden; a nurturing earth bearing fruit; a ripened ovary; maturity. Original Adam is the image of God as creator, initial agent, activity. Fallen Adam appears as the agent of earthly transformation, the hero who redeems the fallen land. Father Adam is the image of God as patriarch, law, and rule, the model for kingdom and state.

These denotions of nature as female and agency as male are encoded as symbols and myths into land that has the potential for development but needs the male hero—Adam. But such symbols are not "essences" because they do not represent characteristics necessary or essential to being female or male. They are historically constructed meanings derived from the origin stories of European settlers and the cultural and economic practices they transported to and developed in the New World. These gender symbols are not immutable; they can be changed by exposing their presence and rethinking history.

The male/female hierarchy encoded into the Genesis texts both consciously and implicitly socializes the young into behavioral patterns. Eve, after ingesting the fruit, is told she will be ruled by her husband, and the conflation of animals with women as helpmates is also explicit. In all versions of the story, Eve became Adam's "wife" after the two

became one flesh, and she is to be "ruled over" or "dominated" by her husband after she disobeys God.[17]

But there is another way to read the gendered message. In the feminist reading, Genesis 1's simultaneous creation of men and women indicates their potential equality ("male and female created He them"). Recovery, therefore, is an effort to reclaim an original gender equality or partnership. Genesis 2, on the other hand, depicts the creation sequentially, first, of a real, material male body from dust and, second, woman from the body of the male. Hence Eve is second in the order of creation, implying the subjection of woman to man.[18] But some feminists argue that Eve is not derivative of Adam; he was not awake at her creation, nor was he even consulted in advance. "Like man, woman owes her life solely to God," states Phyllis Trible, "to claim that the rib means inferiority or subordination is to assign the man qualities over the woman which are not in the narrative itself." Eve's role in initiating the Fall can also be debated. Was she the weaker, more vulnerable sex and hence susceptible to the serpent's temptation? Or, was she actually the First Scientist—the more independent and curious of the two—as in the Mark Twain epigraph above. In this reading, Eve was the one who questioned the established order of things and initiated change. As original biologist, Eve talks to the snake and nature rather than to God as does Adam. As prototypic scientist, Eve could hold the key to recovering Eden through a new science.[19]

While the Bible does not employ the term *partner* for the male-female relationship, today some people are rethinking the Genesis pas sages in terms of partnership. Theologian Ray Maria McNamara interprets the creation story in Genesis 1 in terms of a partnership between God and the earth. She notes that although God said "Let the earth bring forth grass and herb" it was actually the earth as an active partner that "brought forth grass and herb…and the tree yielding fruit." Another contribution to a partnership interpretation is made by the Reverend William M.Boyce Jr., who offers a free translation of several of the Genesis verses. He portrays Adam and Eve as helpers, partners, and colleagues to one another and a God who views the whole of creation as very, very good.[20]

STEWARDSHIP VERSUS DOMINION

While the role of gender is central to the story, equally critical is the question of human dominion versus stewardship of nature. If Genesis 1 is accepted as the ethical model, as it is in mainstream Western culture, then the domination of nature could be interpreted as the ideal pathway

to Recovery. But if Genesis 2 represents the ethical ideal (humans as stewards over the animals), then Recovery could mean that humans are the caretakers and stewards of nature. The Bible and the Torah, in Christian and Judaic traditions, provide interesting variations on the language of the two creation stories leading to dominance or stewardship.

The terms *dominion mastery, subduing, conquering,* and *ruling* predominate in different translations of the Genesis 1 story In order to have dominion, men and women must "be fruitful," "be fertile," "become many," "increase," "multiply," "grow in number," "have many children," and then "replenish," "fill," "fill up," and "people" the "earth" or the "land."[21] If the fall from Eden entails the loss of immortality bestowed by the tree of life, humans can henceforth attain immortality only through sexual procreation. Thus, in the mainstream story of Western culture, to recover the Garden of Eden means that people must not only convert the earthly wilderness into a garden, but must also replenish the earth by expanding the human population over space and time. The Genesis 1 ethic, claims that humans must "replenish the earth and subdue it." Or, as historian Lynn White Jr. argued in 1967, it is "God's will that man exploit nature for his proper ends."[22]

Genesis 2 presents stewardship as an ethical alternative to the domination of nature. God puts "man" into the Garden of Eden and instructs him "to dress it and to keep it."The Genesis 2:15 ethic is often interpreted as the stewardship of nature, as opposed to the Genesis 1:28 ethic of dominion or mastery. In Genesis 2, the earth is a garden—a local plot of land rather than a vast area for spatial conquest—and the man is commanded to "dress," "keep," "tend," "guard," and "watch over" it. According to ecologist René Dubos, God "placed man in the Garden of Eden not as a master but rather in a spirit of stewardship." For many religious sects wishing to embrace an ecological ethic, stewardship is the most persuasive ethic that is also consistent with biblical traditions. Stewardship is a caretaker ethic, but it is still anthropocentric inasmuch as nature is created for human use.[23] Moreover, Nature is not an actor, but is rendered docile.

Throughout most of Western history, the biblical mandates of stewardship and dominion have sometimes been explicitly separated and at other times implicitly merged. For example, medieval enclosed gardens were often protected, carefully stewarded spaces, while eighteenth-century garden estates were vast displays of dominion and power. Early American farms ranged from small patches in the forest tended mainly for family provisions to large plantations and capitalist

ranches that dominated the landscape. While the former exemplify potential partnerships between humanity and the land, the latter represent the potential for human mastery over the earth. Colonists, planters, and westward pioneers often explicitly cited the Genesis 1:28 mandate in order to justify expansion. In Western culture, the Genesis 1 and 2 accounts have usually been conflated. In the mainstream Recovery project, humanity has turned the entire earth into a vast garden by mastering nature. The Genesis 1:28 ethic of dominion has provided the rationale for the Recovery of the garden lost in Genesis 2 and 3, submerging the stewardship ethic of Genesis 2:15.

When Adam and Eve tasted the fruit of the tree of the knowledge of good and evil, humans acquired their potential omniscience of nature. Wanting to become more like God, humanity has craved knowledge of everything. Since the seventeenth century, mainstream Western culture has pursued the pathway to Eden's Recovery by using Christianity, science, technology, and capitalism in concert. That human dominion over nature, however, has costs in terms of the depletion of the planet's resources.[24]

The Genesis stories provide two ethical alternatives, dominion and stewardship—both of which are anthropocentric. They do not explicitly acknowledge nonanthropocentric ethics, such as ecocentrism in which humanity is only one of a number of equal parts—an ecocentric ethic; nor is biocentrism a possibility, in which value is grounded in life itself, rather than being centered on humanity. But another form of ethics is the partnership ethic I propose that posits nature and humanity as equal, interacting, mutually responsive partners (see chapter 11). This ethic combines human actions and nature's actions in a dynamic relationship with each other. Here nature is not created specifically for human use, nor are women and animals seen as helpmates for "man." Rather, human life and biotic life exist in mutual support, reciprocity, and partnership with each other. Gardens could exemplfy places in which the practice of gardening is a caretaking of the soil and the life it generates.[25]

ENVIRONMENTALIST AND FEMINIST NARRATIVES

An alternative to the mainstream story of Fall and Recovery is told by many environmentalists and feminists. This second narrative begins in a StoneAge Garden of Eden and depicts a gradual, rather than precipitous, loss of a pristine condition. It uses archeological, anthropological, and ecological data, along with myth and art, to re-create

a story of decline. Both environmental and feminist accounts idealize an Edenic prehistory in which both sexes lived in harmony with each other and nature, but they are nevertheless compelling in their critique of environmental disruption and the subjugation of both women and nature. When viewed critically, both can contribute to a new narrative of sustainable partnership between humanity and nature.

One version of the environmental narrative is exemplified by the work of philosopher Max Oelschlaeger. Paleolithic people, he notes, did not distinguish between nature and culture, but saw themselves "as one with plants and animals, rivers and forests, as part of a larger, encompassing whole…." In that deep past, people in gathering/hunting bands lived sustainably and "comfortably in the wilderness," albeit within cycles of want and plenty. Contained within the sacred oneness of the *Magna Mater* (the Great Mother), hunters followed rituals that respected animals and obeyed rules for preparing food and disposing of remains. Cave paintings, for example, reveal human-animal hybrids that suggest identity with the *Magna Mater,* while the cave itself is her womb. Although myth rather than science explained life, Stone-Age peoples, argues Oelschlaeger, were just as intelligent as their "modern" counterparts.[26]

Oelschlaeger sees humankind's emergence from the original oneness with the *Magna Mater* as the beginning of a wrenching division, just as birth is a traumatic separation from the human mother. He writes, "No one knows for certain how long prehistoric people existed in an Edenlike condition of hunting-gathering, but 200,000 years or more is not an unreasonable estimate for the hegemony of the Great Hunt. Even while humankind lived the archaic life, clinging conceptually to the bosom of the *Magna Mater,* the course of cultural events contained the seeds of an agricultural revolution, since prehistoric peoples were practicing rudimentary farming and animal husbandry."[27]

Oelschlaeger's narrative is one of gradual decline from the Paleolithic era rather than a precipitous fall as depicted in the Genesis 3 story. Near the end of the last ice age, around 10000 B.C.E., changes in climate disrupted Paleolithic ecological relations. Animals and grains were gradually domesticated for herding and cultivation, heralding a change to pastoral and horticultural ways of life, particularly in the Near East. Once humans became agriculturists, Oelschlaeger observes, "the almost paradisiacal character of prehistory was irretrievably lost." Differences between humans and animals, male and female, people and nature became more distinct.[28] Humanity lost the intimacy it once had with the Magna Mater: "Western culture was now alienated from the Great Mother of the Paleolithic Mind."[29]

The first environmental problems stemming from large-scale agriculture occurred in Mesopotamia. Canals stretched from the Tigris to the Euphrates, bringing fertility to thousands of square miles of cropland; but as these irrigation waters evaporated, salts accumulated in the soils and reduced productivity. Oelschlager suggests that agriculture marks a decline from an Edenic past: "If the thesis that agriculture underlies humankind's turn upon the environment, even if out of climatological exigency, is cogent, then the ancient Mediterranean theater is where the 'fall from Paradise' was staged…"[30]

In the Near East, the great town-based cultures emerged around 4000 B.C.E. By about 1000 B.C.E., the ancient tribes of Yahweh had become a single kingdom, ruled by David, that practiced rain-based agriculture. The God Yahweh above the earth represents a rupture with the Magna Mater of the Paleolithic era and a legitimization of the settled agriculture and pastoralism of the Neolithic era. The Hebrews rebelled against sacred animals as idols and placed Yahweh as the one god above and outside of nature. Time was no longer viewed as a cyclical return, but as a linear history with singular determinative events. As the "chosen people," Hebrew agriculturists and pastoralists became part of a broad-based transition from gathering/hunting to farming/herding.[31]

Ecologically, the fall from Eden, told in Genesis 2, may reflect the differences between gathering/hunting and farming/herding initiated thousands of years earlier. In the Garden of Eden's age of gathering, Adam and Eve pick the fruits of the trees without having to labor in the earth. The transition from foraging and hunting to settled agriculture took place some 9,000 to 10,000 years ago (7000–8000 B.C.E.) with the domestication of wheat and barley in the oak forests and steppes of the Near East. Around 5,000 years ago (3200–3100 B.C.E.), fruits such as the olive, grape, date, pomegranate, and fig were domesticated. By 600 B.C.E., when the biblical stories were codified, fruit trees were cultivated throughout the Near East. The Genesis 2 story may reflect the state of farming at the time and the labor required for tilling fields as opposed to tending and harvesting fruit trees.[32]

The tilling, planting, harvesting, and storing of wheat and barley represents a form of settled agriculture in which the earth was managed for grain production. "By the time the Genesis stories were composed," writes Oelschlaeger, "man had already embarked on the task of transforming nature. In the Genesis stories [he] justifies his actions."[33] In Genesis 1, the anthropocentric God of the Hebrews commands that the earth be subdued. This represents a rupture with the nature gods of the past that occurred during the transition from polytheism to

monotheism and was codified during the years of Israelite exile in Babylon between 587 and 538 B.C.E.

During the Iron Age (1200–1000 B.C.E.), the cultures of Israel and Canaan had overlapped. Canaanite mythology included a pantheon of deities: the patriarch El; his consort and mother-goddess, Asherah; the storm-god Baal, and his sister/consort Anat. Although the worship of Yahweh predominated, Israelites also worshipped El, Baal, and Asherah. During the period of the monarchy (ca. 1000–587 B.C.E.), the figure of Yahweh assimilated characteristics of the other deities, and Israel then rejected Baal and Asherah as part of its religion. "By the end of the monarchy," states Mark S.Smith, "much of the spectrum of religious practice had largely disappeared; monolatrous Yahwism was the norm in Israel, setting the stage for the emergence of Israelite monotheism."[34]

Monotheism represented an irrevocable break with the natural world. Henri and H.A.Frankfort note that the emergence of monotheism represents the highest level of abstraction and constitutes the "emancipation of thought from myth." They write, "The dominant tenet of Hebrew thought is the absolute transcendence of God. Yahweh is not in nature…. The God of the Hebrews is pure being, unqualified, ineffable…. Hence all concrete phenomena are devaluated." Although God had human characteristics, he was not human; although God had characteristics assimilated from other deities, he was the One God, not one among many gods.[35]

From an ecological perspective, the separation of God from nature constitutes a rupture with nature. God is not nature or of nature. God is unchanging, nature is changing and inconstant. The human relationship to nature was not one of *I* to *thou,* not one of subject to subject, nor of a human being to a nature alive with gods and spirits. The intellectual construction of a transcendent God is yet another point in a narrative of decline. The separation of God from nature legitimates humanity's separation from nature and sets up the possibility of human domination and control over nature. In the agricultural communities of the Old Testament, humanity is the link between the soil and God. Humans are of the soil, but separate from and above the soil: they till the land with plows and reap the harvest with scythes; they clear the forests and pollute the rivers; their goats and sheep devour the hillsides and erode the soil. Over time, the natural landscape is irrevocably transformed. At the same time, however, nature is an unpredictible actor in the story. Noah's flood, plagues of locusts, earthquakes, droughts, and devastating diseases inject uncertainties into the outcome. Efforts to control nature

come up against chaotic events that upset the linearity of the storyline and create temporary or permanent setbacks.[36]

The environmentalist narrative of decline initiated by the transition to agriculture continues to the present. Tools and technologies allow people to spread over the entire globe and to subdue the earth. The colonizers denude the earth for ores and build cities and highways across the land. Despite this destruction, however, environmentalists hope for a Recovery that reverses the decline by means of planetary restoration. The environmental Recovery begins with the conservation and preservation movements of the nineteenth century and continues with the environmental movement of the late twentieth century

FEMINIST NARRATIVES

Many feminists likewise see history as a downward spiral from a utopian past in which women were held in equal or even higher esteem than men. This storyline was developed in the nineteenth century by Marxist philosopher Friedrich Engels, who saw the "worldwide defeat of the female sex" at the dawn of written history, and by anthropologists such as Johann Bachofen, August Bebel, and Robert Briffault. It was elaborated in a series of compelling studies by twentieth-century feminists such as Jane Harrison, Helen Diner, Esther Harding, Elizabeth Gould Davis, Merlin Stone, Adrienne Rich, Françoise d'Eaubonne, Marija Gimbutas, Pamela Berger, Gerda Lerner, Monica Sjöö, Barbara Mor, Riane Eisler, Elinor Gadon, Rosemary Radford Ruether, and a host of other feminists and ecofeminists. Like the environmental story, the feminist story captures the imagination by its symbolic force and its dramatic loss of female power. But like the environmental narrative, it must be critically evaluated for its overly utopian past from which women "fell" and its polarization of the sexes into positive female valences and negative male valences.[37]

In broad outlines the story of the decline of women, goddesses, and female symbolism woven by feminist writers is as follows. Elizabeth Gould Davis in *The First Sex,* sets out the storyline:

> When recorded history begins we behold the finale of the long pageant of prehistory…. On the stage, firmly entrenched on her ancient throne, appears woman, the heroine of the play. About her, her industrious subjects perform their age-old roles. Peace, Justice, Progress, Equality play their parts with a practiced perfection…. Off in the wings, however, we hear a faint rumbling — the…jealous complaints of the new men who are no longer

> satisfied with their secondary role in society…. [T]he rebellious males burst onstage, overturn the queen's throne, and take her captive…. The queen's subjects—Democracy, Peace, Justice, and the rest—flee the scene in disarray. And man, for the first time in history, stands triumphant, dominating the stage as the curtain falls.[38]

This story of decline from a past dominated by female cultural symbols and powerful female deities into one of female subordination is presented by many feminist writers. The plot is a downward trajectory throughout prehistory and written history in which female power is lost or obscured. Recovery, however, can occur with emancipation, social and economic equality, and the return of powerful cultural icons that validate women's power and promise. Merlin Stone conveys the argument when she writes that in the Neolithic era (ca. 7000 B.C.E.) people worshipped a female creator, a great goddess who was overthrown with the advent of newer religions. The loss of paradise, she holds, is the loss of a female deity. The beginnings of this narrative occur in the ancient Near East with the overthrow of goddess worshipping horticulturalists by warriors on horseback.[39]

Horticulturists who lived during the period from 7000 to 3500 B.C.E. in Old Europe—the area of present-day Greece and the former Yugoslavia—were, according to archeologist Marija Gimbutas, apparently peaceful groups who did not develop destructive weapons. Men and women were buried side by side, indicating equal status. Their lives revolved around fertility rituals based on the female principle. Birth, death, and regeneration were reflected in statues of female deities with large buttocks, pregnant bellies, and cylindrical necks. The concepts of male and female, animal and human, were fused. Nature was venerated, Artifacts show large eggs with snakes wound around them that symbolized the cosmos, while fish, water birds, butterflies, and bees captured the vibrancy of the natural world. Gimbutas's interpretation of grave sites as representing equality and her conjectures about the symbolic meanings of markers on vases and statues have been questioned, but her work is nonetheless compelling in part because the storyline she imposes on the past is one of great power especially for women.

Between 4400 and 2800 B.C.E., Gimbutas argues, the apparent oneness with nature and equality between genders was ruptured. She identifies three major waves of horse-mounted Kurgan invaders that conquered Old Europe and introduced hierarchical social relations and

sun-god worship. Excavated graves from this period reveal male chiefs. They were buried with servants at their feet, and their graves contained weapons of human destruction and material possessions to indicate their high status. Sky gods rather than earth deities appear on pottery, suggesting a new worship of the heavens above rather than animate spirits within nature. This interpretation has likewise undergone scrutiny because it attributes all disruption to external forces and seems to give far less credence to internal social changes and adaptations to external events.[40]

The feminist narrative continues with the overthrow of goddesses in ancient Mesopotamia and Egypt and their replacement by male principles. Throughout the Mediterranean world, as a more settled way of life began, shifting settlements became towns, and civilizations with recorded histories arose. These cultures were rooted in the cyclical return of rains. Sumeria (Mesopotamia) blossomed in the fertile crescent between the Tigris and Euphrates Rivers. Sumerian gods were identified with nature: sky (An), earth (Ki), air (Enlil), and water (Enki). Domesticated animals, such as the bull and cow, symbolized fertility.[41]

A array of powerful female deities existed who were overthrown and replaced by male deities. In Mesopotamia, the Sumerian goddess Ishtar (Inanna) was portrayed with her much smaller son-lover, Tammuz. She renewed life each spring when she descended to the underworld to bring Tammuz back from the dead. Over time, however, Ishtar faded in importance to Tammuz. Another female deity was the life-giving Tiamat, who symbolized the earth. She was slain by her great great grandson, Marduk, who went on to create the heavens and the earth, heralding the rise of patriarchal society. Similarly, the male hero Gilgamesh (second millennium B.C.E.), who slew the forest god Humbaba, symbolized agriculture's encroachment on the ancient forests.[42]

In Egypt, Isis represented the maternal principle. She produced vegetation when impregnated by Osiris, her brother-husband. Every spring her tears overflowed to flood the Nile, which made the soil fertile. In one hand she carried a sistrum, or rattle, to awaken the powers of nature. In the other she held a bucket of Nile water, and her gown was decorated with stars and flowers to symbolize nature.[43] Osiris was the god of the people and bestowed gifts on humankind. He was killed by his brother Seth and restored to life by Isis, his sister-wife. Osiris, however, was a deity who descended from Atum-Re, the Sun God, and was associated with the Egyptian Sun Kings, or pharaohs, who embodied male power and virility.[44]

Fig. 2.5. Stone-age female figure with large buttocks and breasts, interpreted by some archeologists and feminists as representing the fertility of the earth and women. Neolithic Figure, Tel Chagar Bazar, Mesopotamia. Copyright the British Museum, London

Feminists argue that a similar transition in the worship of goddesses to that of gods and a decline in the relative importance of female to male principles also occurred in ancient Greece. The Mycenaeans, who

worshipped the goddess on the island of Crete at the Palace of Knossos about 1400 B.C.E., founded cities on mainland Greece, bringing with them worship of the mother goddess, which thrived from 1450 to 1100 B.C.E. Artemis, goddess of the hunt, was worshipped, as were the fertility goddesses Demeter and Persephone. The Achaean invasions of the thirteenth century B.C.E. began to weaken matrilineal traditions and by the close of the second millennium B.C.E., with the advent of the Dorians, patrilineal succession became established. The goddess Athene was reconfigured as a motherless female, free of maternal desire and labor pains, springing from the head of the male god Zeus. Here the male gives birth to the female, reversing the natural birth process. While the common people continued to worship Artemis, Demeter and Persephone, the ruling elite set up Olympian Gods, such as Zeus and Apollo as a patriarchal, rational idealized pantheon.[45]

The feminist narrative also reverses the biblical story. It begins with powerful female creative principles. It was the goddess Anat (Eve), mother of all the living, who created Yahweh. And, following the tradition in which goddesses gave birth to sons who then became their spouses, Eve created Adam, who then became her consort. Moreover, in the feminist story, Adam was born of Eve's rib, not vice versa. The very idea that Adam should give birth to Eve (as Zeus similarly gave birth to Athena) reverses the biological process in which women give birth to men. Notes Elizabeth Gould Davis, "[T]he whole intention of the distortion manifested in the Hebrew tale of Adam and Eve is twofold: first, to deny the tradition of a female creator; and second, to deny the original supremacy of the female sex."[46]

The feminist narrative likewise reveals important relationships between Eve and nature. Eve's mythological connections to the mother goddesses Tiamat, Inanna, Ishtar, Isis, and Demeter are reinforced by her associations with the garden, the serpent, and the tree, all of which were both nature and of nature. First, the Garden of Eden itself is nature. It was originally created by the mother goddess, and its loss represents the loss of intimacy between woman and nature. Second, the serpent, associated as divine counsel with the mother goddesses and female deities of Mesopotamia (Tiamat, Ishtar); Egypt (Hathor, Maat); Crete (the priestesses of Knossos); and Greece (Athena, Hera, Gaia) was the intimate link between Eve and a nature with which she communicated through speech. Third, the tree symbolized the fertility of nature and Eve's initial ingestion of its fruit initiated sexual consciousness. In the biblical expulsion story, Eve, the serpent, nature, and the body are all relegated, after the Fall, to the lowest levels of being. Merlin Stone sums up the consequences of these ancient

Fig. 2.6. The Egyptian female deity, Isis, symbolized the fertility of nature as the Nile annually overflowed to produce crops. She rattles her sistrum to awaken the powers of nature and with her pail pours water onto the land. Isis, in Athanasius Kircher, *Oedipus Aegypticus* (1652). Courtesy of the Bancroft Library, University of California, Berkeley

associations between Eve and Nature: "[A] woman, listening to the advice of the serpent, eating the forbidden fruit, suggesting that men try it too and join her in sexual consciousness…caused the downfall and misery of all humankind."[47]

While many feminists have found evidence for a transition from matriarchy to patriarchy, other writers such as Riane Eisler see humanity as taking a five-thousand-year detour from a partnership society in prehistory to a dominator society that has existed throughout most of recorded history. She argues that today we have the possibility of reestablishing a partnership society in which men and women are linked as equals rather than ranked as dominant and submissive. Although feminist theologian Rosemary Radford Ruether does not employ the term *partnership,* in *Gaia and God* she calls for a healing process that will reconfigure the positive features of Western culture and Christianity. She advocates a reordering of social relations that will promote justice in relationships between women and men and among races, classes, and nations. And in "Gender and the Problem of Prehistory," Ruether suggests that "the only way we can, as human, integrate ourselves into a life-sustaining relationship to nature, is for both of us, males as much as females, to see ourselves as equally rooted in the cycles of life and death, and equally responsible for creating ways of living sustainably together in that relationship."[48]

COMPARING THE NARRATIVES

The mainstream, environmentalist, and feminist Recovery Narratives all have strengths and weaknesses. The mainstream story of the Recovery of Eden through modern science, technology, and capitalism is perhaps the most powerful narrative in Western culture. It has been absorbed consciously and unconsciously by millions of people over several centuries. This story writ large is one in which people participate as actors and which they incorporate into their daily lives. As a narrative it is both inspiring and realizable, providing a positive earthly goal and a promise of ultimate salvation. A vast treasury of first-rate scholarship exists on the origins and transmission of the Christian and modern stories and their impacts and implications for history and society.

Yet however comprehensive and positive as a narrative, the mainstream Recovery story is also an ideology of domination over nature and other people. In the following chapters, I will argue that, among other things, this narrative provides a justification for the takeover of New World lands and peoples and the management and transformation of forests, fields, and deserts. The Christian narrative is based on the

belief and assumption that a monotheistic deity exists who has ordained a mode of behavior for humanity and designated roles for men and women. Such beliefs are based on acts of faith rather than credible evidence. Whatever positive ethics of care and stewardship arise from such beliefs, there exists an equal catalogue of war and violence against humanity and atrocities against the earth in the name of that deity. The deity can take on any attributes any group wishes to assign to it, and becomes a rationale for any actions a particular group wishes to take. As such, God (however defined and by whatever religion or sect) can be seen as a social construct that becomes a justification and an ideology for human behavior. The sacred texts that reveal such a deity can be viewed as humanly constructed stories arising out of specific social, historical, and environmental circumstances.

The environmentalist and feminist narratives likewise have strengths and weaknesses. They use climatological, archeological, anthropological, historical, and mythological evidence to support the storylines. The stories can be criticized, revised, or rejected on the basis of how they use, accept, and organize their evidence. To the extent that they deal with prehistory, their validity depends on how they interpret archeological, anthropological, and mythological evidence and the generalizability of that evidence.

Deciding how an early society behaved toward nature from surviving, nondecomposable artifacts is enormously difficult. Whether a Magna Mater or a variety of nature spirits or goddesses existed in prehistory is built on conjecture and extrapolation from later historical documents and anthropological observations. Whether mythologies recorded later in time actually reflect social realities or influence human behavior is problematical. Moreover, of the many statues and images that have survived, some are female, others are male, and still others are male/female or simply anthropomorphic. Some female images are buxom or pregnant with broad buttocks oriented toward the earth, while others are slender with outstretched arms reaching toward the sky, casting doubt on the universality of female fertility symbols. Other problems arise from the causes of transformation from a presumed egalitarian or matriarchal to a patriarchal society. External migrations such as warriors on horseback who infused sky gods into earth-centered egalitarian cultures or invasions of dominant outsiders places too much weight on external as opposed to internal processes, adaptations, and mutual influences. Such critiques undercut the power of the overarching storyline of the environmental and feminist narratives.

Additional problems exist with respect to the very concept of narrative itself. A narrative, whether Christian, environmentalist, or feminist, is

an ideal form into which particular bits of content are poured. The form is the organizing principle; the content is the matter. Like Plato's pure forms that explain the changing world of appearances, a narrative is a variant of idealism. What is real is the idea itself. In this sense, a Recovery Narrative is an idealist philosophy. To the extent to which people believe in or absorb the story, it organizes their behavior and hence their perception of the material world. The narrative thus entails an ethic and the ethic gives permission to act in a particular way toward nature and other people.

Narratives however are not deterministic. Their plots and ethical implications can be embraced or challenged. Naming the narrative gives people the power to change it, to move outside it, and to reconstruct it. People as material actors living in a real world can organize that world and their behaviors to bring about change and to break out of the confines a particular storyline.

My own view is that out of the global ecological crisis a new story or set of stories will emerge, but the new stories will arise out of new forms of production and reproduction as sustainable partnerships with nature are tested and become viable. Revisions of older spiritual traditions may help to create a new story, but spirituality alone cannot bring about a transformation. Nevertheless, probing the meanings of narrative, gender, and ethics embedded in the Bible and other historical narratives is critical for the planet's future. In chapter 11, 1 propose a partnership ethic that may help to guide decision making and the construction of sustainable livelihoods in the twenty-first century.

THREE
Recovering the Garden

COLUMBUS,
ADMIRAL OF THE OCEAN SEA,
CATALOGING, CONTROLLING, LEADING ME
OUT OF THE SHADOW OF THAT NETHERWORLD,
WHERE ALL LIES SILENT AND UNHEARD.
—*Carolyn Merchant, 1998*

The dreams of the Greeks, Romans, and early Christians were motivated by their longing for a better world beyond the shadows of their everyday lives. In between Old World biblical accounts of a lost Eden and Christopher Columbus's voyages to find Eden in the New World, Western history is filled with Greek and Roman images of a golden age and Christian visions of salvation. By 1300, Dante Alighieri's *Divine Comedy* had deftly entwined these two narratives. In this classic allegory, Virgil guides Dante out of a forested wilderness, through the Fall into the Inferno, and then upward to the earthly Eden of purgatory whence he enters the heavenly Eden of salvation.

In this chapter, I argue that these ancient and medieval narratives are integral steps toward the mainstream Recovery Narrative of reinventing the entire earth as Eden. By the seventeenth century, the medieval escape from Earth to a heavenly Eden would become the secular creation of an earthly Eden. The Greek and medieval stories are thus vital components that merge into Western civilization's transformation of nature into culture, darkness into light, and chaos into order. My own view is that while these progressive developments are positive for Western middle- and upper-class society, they are achieved at the cost of the earth's cultural and biotic diversity. The divergent stories of human progress and environmental decline do not lead to the possibility of partnership between humanity and nature, yet elements of the two stories suggest that a sustainable synthesis might be found in the future.

THE MEDITERRANEAN ENVIRONMENT

Integral to the mainstream Recovery Narrative is the development of domesticated animals and crops, along with literacy, art, and philosophy that culminated in the Mediterranean world. Classical Greece, during the period 600–200 B.C.E., was situated within mountainous, forested uplands with rocky, but fertile soils. An agricultural system that included cattle, sheep, pigs, and goats provided meat, leather, and dairy products; horses and donkeys supplied transportion and hauling; barley and wheat produced bread. Additionally there were now grapes, olives, and fig trees for fruits; chickens and geese for eggs; and bees for honey

Greek and Roman civilizations were the beneficiaries of livestock and crop domestication that had occurred centuries earlier. Jared Diamond has argued that the "major five" Eurasian domesticated animals (the sheep, goat, cow, pig, and horse) gave the ancient world as well as modern Europeans a biological advantage as they expanded around the globe. The sheep and goat were domesticated around 8000 B.C.E., the cow, which is part of the larger group of cattle, including oxen, about 6000 B.C.E. in Asia, India, and north Africa. The pig was domesticated in China and south-west Asia around 8000 B.C.E. and the horse in the Ukraine around 4000 B.C.E. Diamond further argues that the grain crops that made settled agriculture possible were domesticated in the Fertile Crescent around 8000 B.C.E. These included the broadcast cereal crops: two types of wheat, Emmer and Einkorn (the first with two grains in each spikelet, the second with one) and barley; the pulses—lentils, peas, and chickpeas—and flax that yielded fibers for clothing. Additionally, nuts and fruits, in particular olives, figs, dates, and grapes appeared in the Fertile Crescent around 4000 B.C.E. Finally, fruits, such as apples, pears, plums, and cher ries, were domesticated in the Fertile Crescent by around 500 B.C.E. (the period of the Garden of Eden story). Diamond's conclusion is that the major five domesticated animals, along with broadcast grains and fruits, provided the foundations for settled agriculture, which in turn spawned the development of culture: writing, mathematics, art, music, law, literature, and especially philosophy.[1]

GREEK AND ROMAN NARRATIVES

By the fifth century B.C.E., Greek philosophers had established a dichotomy between a changing natural world and an unchanging abstract world of ideas, creating the philosophical assumptions behind the Recovery Narrative's movement from inconstant fallen nature to the prediction and management of nature. Heraclitus of Ephesus (540–475

B.C.E.) boldly asserted that all is change: "You cannot step twice into the same river, for other waters are ever flowing onward." By contrast, Parmenides of Elea (504 B.C.E.) argued that no change is possible because of the tautology: Being *is.* Being is one, whole, indivisible, irreducible, and unchangeable. In short, it is existence itself and can be divided only by nonexistence. But *not* being, by definition, does not exist. These two contradictory philosophies formed the basis of Plato's (427–347 B.C.E.) distinction between the ever-changing world of appearances and the unchanging real world of pure forms, exemplified by mathematics and ideals such as *the good.* Plato argued that the natural world can never lead to truth. Truth is constituted only by the world of pure forms divorced from nature. The appearances therefore constitute the unpredictable, natural world, while mathematical ideals become the basis for the predictable, managed world. Greek philosophy's narrative movement from inconstancy to predictability is a major foundation of the progressive Recovery Narrative.

Western culture merged the Greek and Christian narratives to create a compelling vision of the Recovery of Eden. The Greek world of appearances is strikingly similar to the Christian world of fallen nature. Greek philosophy contributed the intellectual framework for the modern version of the Recovery Narrative. Parmenidean oneness represents the unchanging natural law that has lapsed into the appearances of the Platonic world. This phenomenal world, like the Christian world, is incomplete, corrupt, and inconstant. The fallen can partake of the original unity only by recol lecting the pure unchanging forms. By the time of the Renaissance, Platonism had become sufficiently Christianized to provide paradigmatic ideals (such as the Garden of Eden) to convey the meaning of the earthly signs and signatures leading to the Recovery.

NARRATIVES OF DECLINE

Yet Greek narratives also depicted a slide downward from a prior golden age. Hesiod (eighth century B.C.E.) told of a time when immortal men lived "like gods" on Olympus, where all was "of gold," and were fed by the spontaneity of the earth's products. The "grain-giving soil bore its fruits of its own accord in unstinted plenty, while they at their leisure harvested their fields in contentment amid abundance." In subsequent periods—the Ages of Silver, Bronze, Heroes, and Iron, the last of which was the present age—the environment degenerated and people were subjected to unceasing

agricultural work, trouble, and discord. The Golden Age and its life of leisure seemed forever lost.[2]

The degradation of the Greek environment bore out Hesiod's story. Domesticated animals covered most of the landscape, overgrazing the vegetation, devouring new shoots of grass and trees, and cutting the soils with their sharp hooves. Intensive cultivation on limited fertile soils promoted erosion and depleted nutrients, offset to some extent by contour plowing and terracing. Harvesting wood for dwellings, temples, carts, chariots, ships, furniture, weapons, and fuel wrought havoc on the higher mountain forests, reducing their extent from approximately one-half to a current one-tenth of the land cover, and resulting in erosion of soil and sand. Hunting of large animals and birds, fishing and shellfish gathering; quarrying of marble; and mining for gold, silver, and iron depleted biota and nonrenewable ores.[3]

Plato, in the *Critias,* described the environmental destruction. In ancient times—nine thousand years ago—the gods had tended humans as if they were sheep, guiding them not by force, but as a helmsman steers a boat. Society comprised artisans, farmers, and warriors and the land supported the people, as well as a vast army. Attica contained excellent fruits, pastures for animals, and brought forth an abundance of produce. Wood was plentiful, the hills and plains contained rich soils, and rainfall was captured in streams, rivers, and fountains. Trees were tall and of sufficient diameter to form strong roof timbers. Plato goes on to observe: "Such was the natural state of the country, which was cultivated…by true husband-men, who made husbandry their business. [It] had a soil the best in the world, and abundance of water, and in the heaven above an excellently attempered climate." Now, however, the remnant of land that still existed was "a mere skeleton," in which remained only "the bones of a wasted body." Only traces of timber were to be found in the mountains, and the woodlands sustained only bees. Rainfall was no longer absorbed by the soil, but poured down the barren hills to the sea, eroding the land.[4]

Roman writiers were likewise sensitive to environmental destruction. Ovid, in the *Metamorphoses* (C.E. 7) depicted the changes to nature and humanity after the decline from an initial golden age. The golden age, he held, was a time when a bountiful (unplowed) mother earth brought forth grains, fruits, honey, and nectar. People were happy, peaceful, "unaggressive, and unanxious." Spring lasted forever, people gathered berries on the mountains, and the wind blew gently across native flowers. But in the subsequent silver, bronze, and iron ages, swindling, strife, violence, and war became commonplace. People dug into the earth for gold and mother earth gave birth to monsters in the shape of

men who were "contemptuous of gods, and murder-hungry and violent."[5]

This Greco-Roman framework of decline from a prior state of leisure, happiness, and plenty in a bountiful, diverse environment to one of labor and discord in a degraded environment is similar to the loss of a life of leisure in the Garden of Eden depicted in the biblical stories.

NARRATIVES OF PROGRESS

The Roman tradition, however, also generated a progressive narrative based on the cycles of nature and a positive view of human potential. During the Renaissance, this narrative would become incorporated into a story of human and natural development set out in stages. Virgil (70–19 B.C.E.) wrote of a progress from "savagery" to "civilization" imbedded within a metanarrative of cyclical return. Nature was a principle of development that derived from the Latin word *nascere,* "to be born." Each developmental stage was inherent in its predecessor—an actualization of a prior potential. The word *nation* also derived from *nascere;* hence the nation-state was born from the state of nature.[6]

Virgil's narrative of the development from nature to nation moves through four stages that mimic the human life cycle. The first stage is death and chaos—a world filled with presocial "wild" peoples (winter). This gives way to stage two: birth and the pastoral, in which people graze their sheep on pastured lands (spring). The third stage is symbolized by youth or farming, by plowing and planting gardens (summer). Stage four is maturity, represented by Rome as the city in the garden (fall). Virgil believed that these stages continually cycled, so that stage four was followed by a return to death and chaos. This contrasts with the Christian myth, where recovery leads to redemption and a return to the original Garden of Eden. Within each of Virgil's stages, however, lies the potential to lapse prematurely into the earlier chaotic or "savage" state.

The *Eclogues,* or pastoral poems, characterize Virgil's idyllic stage two. Human labor has domesticated animals, transformed forests into meadows, and dammed springs to form pools for watering livestock. But Virgil's shepherd is relatively passive, watching flocks while reclining in the shade of a tree. This pastoral stage is like the Christian Garden of Eden—its loss is mourned and its innocence yearned for—but in the Roman story, the pastoral passes "naturally" to the third, or agricultural, stage.

Virgil's *Georgics,* or agricultural poems, describe a period in which humans actively labor to cultivate not only the earth but themselves. In

this stage, the potentials of both society and earth are actualized and perfected. When farmers till the ground and tend their crops, nature's bounty brings forth fruits: "Father Air with fruitful rains" descends on the "bosom of his smiling bride" to feed her "teeming womb." Agriculture is initiated by one of the most important gods, Jove, who earlier had "endowed that cursed thing the snake with venom and the wolf with thirst for blood." "Toil taught men the use and method of the plough." Agricultural instruments are forged for the first time, becoming "weapons hardy rustics need ere they can plow or sow the crop to come."[7]

The *Aeneid* reveals Virgil's view of the fourth stage. Here Rome emerges as a city of culture and civilization within a pastoral and agricultural landscape. This is *urbs 'in horto*—the city in the garden. The four developmental phases of nature and nation exist both temporally as stages and spatially as zones. The city actualizes the progression from a chaotic "wild" periphery, through a pastoral outer zone and a cultivated inner zone, to a central "civilized" place. Because nature is viewed as a cyclical development, the decline and fall of Rome is preordained in the final return to winter and chaos.

Yet a second golden age evolves from this chaos as "the great line of the ages is born anew." The "virgin" (justice) returns and a "newborn boy" appears "at whose coming the iron race shall first cease and a golden race will spring up in the whole world." The Roman idea of a newborn child and the Christian vision of the incarnation of Christ converge, offering future Europeans and Americans the possibility of a new birth into an Edenic golden age.[8]

Like Virgil, the Roman poet Lucretius (98–55 B.C.E.) saw nature as a movement from savagery to civilization, but unlike Virgil's optimistic story of continual rebirth, Lucretius's story is pessimistic and tragic. Nevertheless, it too points toward the possibility of a progressive outcome. In *De Rerum Natura (Of the Nature of Things)* the early state of human nature was disorderly, lawless, and chaotic. Before the discovery of plow agriculture, wild beasts consumed humans and starvation was rampant. But early civilization, nurtured by the taming of fire and the cooking of food, foundered on the discovery of gold, as violent wars were spawned by human greed. Lucretius lamented that "things down to the vilest lees of brawling mobs succumbed, whilst each man sought unto himself dominion and supremacy." But out of chaos came order and civilization. People out of their own free will submitted to laws and codes. The creation of civil law imposed order on disorderly humans.[9]

Lucretius's pessimistic view of nature and human nature presaged political theorist Thomas Hobbes's (1588–1679) "state of nature" and "war of all against all," out of which would emerge the seventeenth century social-contract theory of government, a political philosophy integral to the Recovery Narrative (see chapter 4). In Lucretius's poem, humans were competitive and warlike, contesting with each other on the commons and in the marketplace. The poem ended in death, as plague and pestilence overcame the city, breaking off on a note of extreme pessimism and utter terror as piles of dead bodies burned on funeral pyres and all hope was lost. Similarly, the earth went through cycles of life and death. At first, the earth "who deserves her name as mother" brought forth birds, beasts, and humans. "When the earth and air were younger, more and larger things came into being." The fields were like wombs, and the earth's pores gave forth milk like a mother's breasts. But when the earth aged, she became a worn-out woman. Nature died, returning to the chaos of winter.[10]

The Greco-Roman view of nature as a cyclical process of movement from savagery to civilization and back to conflagration and rebirth would be transformed to one of a linear escape from the earth to a heavenly Eden in the Middle Ages and to a recovery of Eden on earth during the Scientific Revolution of the seventeenth century.

ROMAN AND CHRISTIAN STORIES CONVERGE

During the final years of the Roman Empire, the Greco-Roman tradition of confidence in human reason, physical ability, and potential to transform the Earth was challenged by the Christian view of escape from the Earth into other-worldly salvation. Greeks and Romans had seen themselves as godlike men who were remarkably similar to manlike gods. Christians created a gulf between humanity and God. St. Augustine (C.E. 354–430) articulated the Christian belief that humans were sinful, fallible, and helpless. They were continually mortified by the sins of the flesh, and could seek redemption only in Christ. Their sole hope for betterment lay in the afterlife.

Between the fall of Rome (C.E. 476) and the Renaissance, Europe passed through the Dark Ages, feudalism, the Crusades, and the subsequent revival of classical learning. In the Dark Ages, communities were isolated from each other by stretches of thick forest, symbolically filled with darkness, danger, wolves, and witches. These dark forests constituted the wilderness out of which modern society would craft its narrative of emergence into enlightenment. The darkness-into-light

story was consistent with a hierarchical cosmos with the dark interior of the earth at the bottom and the brilliant light of God's empyrean sphere at the top.

Over the five centuries from C.E. 1000 to 1500, forests were cut, swamps were drained, and pasture lands created. Feudal manors, including their villages and surrounding farms, and religious cloisters isolated their inhabitants from the dangers lurking in the darkness. These enclosed places constituted reclaimed, earthly gardens offering protective spaces against the wild. They reflected an effort to make the everyday realities of medieval Europe more secure. In the farmlands of England, gardens were fenced off from both hunted wild animals and herded domestic animals. Walls, hedges, and thorn fences surrounded secure, often circular, spaces. Villagers cooperatively plowed the open fields where grain was grown, while domestic animals grazed on the pastures of the commons. Forests, too, held common resources—deer, rabbits, berries, firewood, and water. Over the centuries, darkness receded into the light of open fields punctuated by church steeples reaching toward the heavens.

DANTE'S FALL AND SALVATION NARRATIVE

The primary narrative of medieval Christianized Europe was a rejection of a painful earthly wilderness and a fervid hope for a heavenly paradise in the afterlife. Although Virgil's story was a narrative of cyclical return rather than one of Fall and Salvation, the Roman poet Virgil was accepted as an early prophet of the new Christian religion. Dante Alighieri (1265–1321) chose Virgil to be his guide as he transformed the GrecoRoman cyclical plot into the medieval Fall and Salvation narrative.

Dante's *Divine Comedy* (1300) illustrates the comic, happy outcome of the search for redemption of both the fallen human soul and the fallen desecrated earth. The plot begins in a dark wilderness. Dante and Virgil move down through the levels of limbo and hell to the center of the earth. Then they progress upward to the earthly paradise on the mountain of purgatory, where the pagan Virgil leaves Dante and the Christian Beatrice takes over. Together Dante and Beatrice ascend through the highest levels of the celestial and Empyrean spheres to the heavenly paradise. Although Dante encounters the earthly Eden as part of his pilgrimage, he continues upward on his journey to salvation. The plot anticipates the redeemed earth, but does not yet embrace the modern story's possibility of reinventing the earth as Eden.[11]

In the classic comic plot, exemplified by the *Divine Comedy,* the tragic elements of decline are converted to the happy outcome of salvation. "In Christianity's vision of redemption," observes literary scholar Robert Pogue Harrison, "the entire earth and all of its nature become…a park, or artificial garden." In the Christian belief system, nature—including fallen human nature—is redeemed through Adam's mastery over the animals, just as Dante's own wilderness is redeemed during his epic journey. Through an individual's own will, the wilderness or animal within can be rehumanized and saved. Over historical time, the will of nature can also be tamed, sanctioned by God's own law and plan for salvation. "Whether we call it redemption or mastery," states Harrison, "this law guarantees the happy ending of the comedy as a whole."[12]

In the process of redeeming the earth, human salvation may also be found. "The comedy in this case," writes Harrison, "is 'salvation history' Its law declares that the wildly diversified freedom of nature shall be overcome and that only the human will shall remain 'free,' in accordance with God's law." In the religious vision, nature and human nature are both integral components of the recovery process: "According to Christian doctrine, the process of redemption involves the redemption of the earth as a whole, not merely its transcendence… Nature too must be drawn into the comedy."[13] The three books of the *Divine Comedy* structure the Fall and Salvation narrative.

The *Inferno* begins with Dante's own "bewilderment" in the wilderness of the "dark forest." Dante is lost, an outlaw from God's moral law. "In the middle of our life's path," he confesses, "I found myself in a dark forest, where the straight way was lost." The forest is deprived of the light of God, just as Dante's own soul is deprived of the light of salvation. The wilderness represents the animality of the fallen material world. When the landscape changes from forest to desert, it is still a wilderness, but it now leads to a mountain that reveals the light of transcendence. But beasts block Dante's way The forest traps his will, preventing his ascent through reason to the light above. His guide, Virgil, then appears. Paradoxically, Virgil first leads him downward through the circles of Hell into the material center of the world.[14]

While lost in the forest, Dante describes nature in the wild and bleak symbols of tragedy. He finds himself in a "dark wood," a "wood of wilderness, savage and stubborn," "a bitter place." The beasts that spring across his path are the wild beasts of the forest and jungle—a leopard, a lion, and a she-wolf. The mountain that he must ascend seems to be a "barren slope," a "wasteland," an "evil place." Turning downward under Virgil's guidance, Dante descends into hell, crossing a

"desert slope" in a "whirling storm" surrounded by "air of endless black." The travelers encounter the souls of the damned, tormented by hornets, wasps, and "disgusting maggots." Nature is portrayed as a fallen world caused by the sin of Adam and Eve. "As in autumn when the leaves begin to fall, one after the other…so did the evil seed of Adam's Fall drop from that shore…"[15]

When Dante emerges from hell onto the opposite side of the world, he encounters the mountain of purgatory During his climb up the mountain, he articulates a new vision of human possibility consistent with the classical learning represented by Virgil. On completing his ascent, Dante once again finds himself in a forest. But this time it is the prelapsarian forest of the earthly paradise—the Garden of Eden. In this divine forest all savagery has vanished; it is a forest redeemed as a park. This "heavenly forest" is "thick with living green," filled with "sweet air," the "joyful sounds" of birds, and the "clearest of all waters on our earth." It is an "ancient wood," the "cradle of mankind," a land "rich in every species." Its trees bring forth "fruit that no man has ever plucked on earth."[16] This vision of the earthly Eden will constitute modernity's Recovery Narrative.

In this divine forest, Dante encounters the consequences of Eve's original sin. He is indignant: "The righteous zeal made me curse the pre sumptuousness of Eve: to think that, while all earth and Heaven obeyed His will, a single woman, newly made, would dare strip off the veil imposed by Him!" Eve should have been submissive rather than willful. But if Eve is responsible for the loss of the earthly paradise, Beatrice represents the possibility of attaining the heavenly one. She appears here for the first time as Dante's new guide.

Dante walks with Beatrice "through the high wood, empty now because of her who listened to the snake."[17] He encounters the "Tree of the Knowledge of Good and Evil" whose "every branch has been stripped of leaf and fruit." On their approach, however, the tree bursts into bloom as if springtime has just arrived. The blooming tree symbolizes the possibility of a redeemed earth. Dante falls asleep and awakens to see apples on the tree, symbolizing Christ and the promise of resurrection. He feels himself to be "a tree renewed, in bloom with newborn foliage, immaculate, eager to rise, now ready for the stars." Yet even this renewed promise does not tempt him to linger in this earthly Eden. He continues the upward journey toward the heavenly Eden and the possibility of salvation above the earth.[18]

With Beatrice guiding him, Dante ascends through the celestial spheres toward the heavenly paradise. This heavenly territory is portrayed in happy, comic symbols. A stream flows "between two

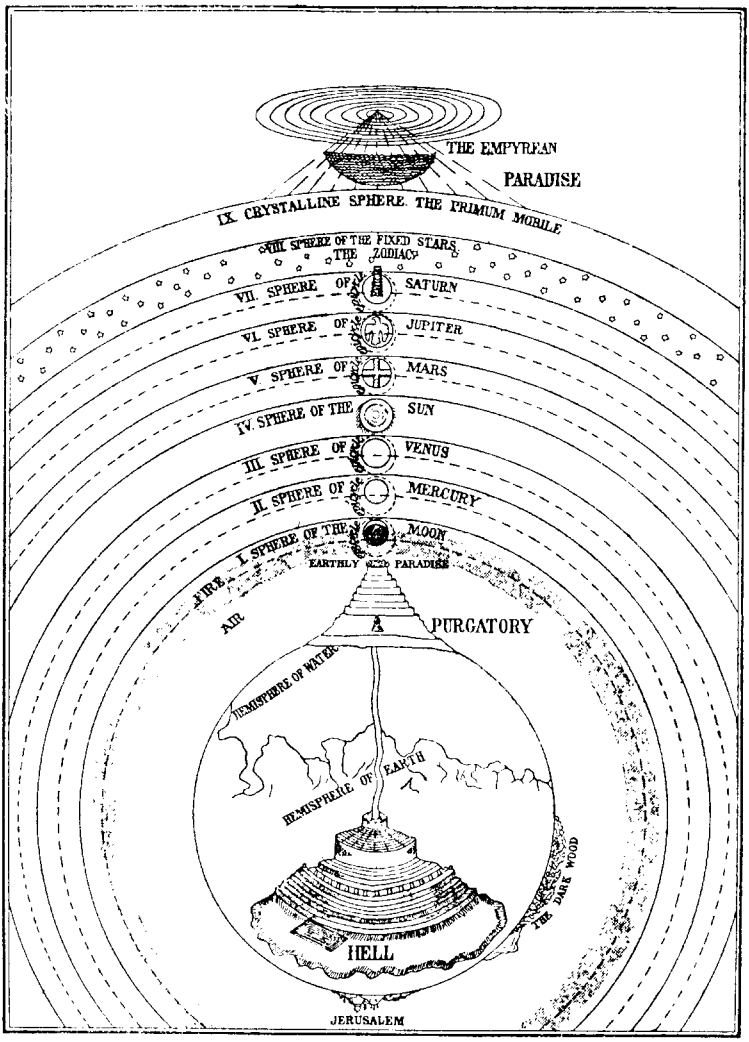

Fig. 3.1. Dante's concept of the cosmos was earth-centered, with Hell on the opposite side of the earth, Purgatory above the earth, and Paradise in the realm of the Empyrean, beyond the spheres of the planets and fixed stars. "Dante's Conception of the Universe," reproduced from F.J.C.Hearnshaw, *Medieval Contributions to Modern Civilisation* (New York Henry Holt, 1922)

banks painted by spring in miracles of color." Sparks of dew reflecting off fragrant flowers look "like rubies set in rings of gold."The

Empyrean heaven is a "hillside rich in grass and flowers," and the souls of the redeemed are reflected in a serene lake. The petals of an eternal rose open perfectly before him. Here "God rules directly without agents" and the "laws of Nature in no way apply." The wilderness of the Inferno has given way to the garden park of purgatory, which in turn has been replaced by the rose of paradise. Darkness has been transcended, material nature vanquished, and wilderness mastered by law. God's law, says Harrison, is the "will of civilization to overcome nature and achieve unconditional human mastery over the earth."[19]

When he reaches the heavenly paradise, Dante first focuses on the Virgin Mary so he can gain the strength to see "the lovely garden flowering in the radiance of Christ." Sitting at Mary's left is Adam, "that father, the one through whose presumptuous appetite mankind still tastes the bitterness of shame." Saint Peter sits on her right. Adam represents belief in the Christ to come, while Saint Peter symbolizes the

Fig. 3.2. After the Fall from Eden, labor was divided between the sexes. Here Adam labors in the earth with his spade, while Eve rocks her child's cradle and spins. Ludolphus of Saxony (d. 1378). *Speculum humanae salvationis* (early 15th century). Courtesy of Corpus Christi College, Oxford University

Christ already come. Adam, who paid the penalty for his sin for over five thousand years, has been redeemed and is now in heaven.[20]

Eve, however, is nowhere to be found. She is absent from the comedy, berated for her sin, and only acknowledged as the mother of all mankind. It is another woman, Beatrice, who with Christ guides Dante toward resurrection. Beatrice is an intellectual pilot who answers his fumbling questions with clear logic and sets up scientific experiments with mirrors and light rays to demonstrate her points. She prefigures *scientia*— Enlightenment science as the road to the recovery of paradise.[21]

EVE AS THE FALL, MARY AS THE RECOVERY

Eve is blamed even more forcefully for the loss of paradise in subsequent versions of the Fall and Salvation narrative. The late

fourteenth-century writer Ludolphus of Saxony's (d. 1378) *The Mirror of Man's Salvation (Speculum humanae salvationis),* and artist Lucas Cranach's "Adam and Eve" (1526) made Eve responsible for the loss of Eden. Ludolphus's version begins with Lucifer's "fall" from God's grace. Lucifer descends from heaven into hell, and then returns as a serpent to tempt Eve. He selects the woman for his victim, believing her to be less wise and wary than the man. Eve was created not from Adam's foot to be despised, nor from his head to override him, but from his side to be his helpmate. But Eve violated her mandate causing the Fall from paradise.

Had she remained sweet and meek, Ludolphus asserted, paradise would never have been lost. In responding to Lucifer's temptation, Eve attempted to be like God. Adam, on the other hand, ate the fruit only out of love for Eve: "The woman therefore sinned more than the man because she thought herself capable of being made like God."[22]

Ludolphus warned his readers to be wary of wicked women and to admire the nobility of Adam. Eve's boldness had caused her husband's fall along with her own. If God's commandment had been kept, neither death, illness, adversity, nor natural disaster (in the form of fire, floods, or wild beasts) would ever have been cast on "man." A similar message is conveyed by Lucas Cranach. Here Eve is the bold instigator of the unfortunate experiment, while Adam is a reluctant participant.

The outcome of the medieval narratives is that through Christianity, the Fall can be reversed by the hope of Salvation, presaging the optimism of the modern Recovery Narrative. The Virgin Mary's womb becomes a metaphor for the garden into which the Holy Ghost cast his special blessing, producing Christ as mankind's savior. The enclosed garden symbolized the womb of the virgin. Mary was a garden of sweetness, blossoming with the fullness of life. She offered hope for recovering heaven.

Dante and Ludolphus play critical roles in setting up the modern Recovery Narrative. Their stories are compelling, blaming Eve for the Fall and crediting the possibility of Recovery to Beatrice and Mary. Eve represents fallen nature, which must be transformed and redeemed, while Beatrice and Mary symbolize the recovered garden that can be penetrated through science and faith. But while Eve's curiosity initiates the Fall, it also sets up a method of questioning nature that Beatrice's enlightened knowledge brings to fruition. While Mary's womb symbolizes the enclosed medieval garden, its penetration also sets up the possibility of the expansive, geometrically designed gardens of the eighteenth century Enlightenment.[23]

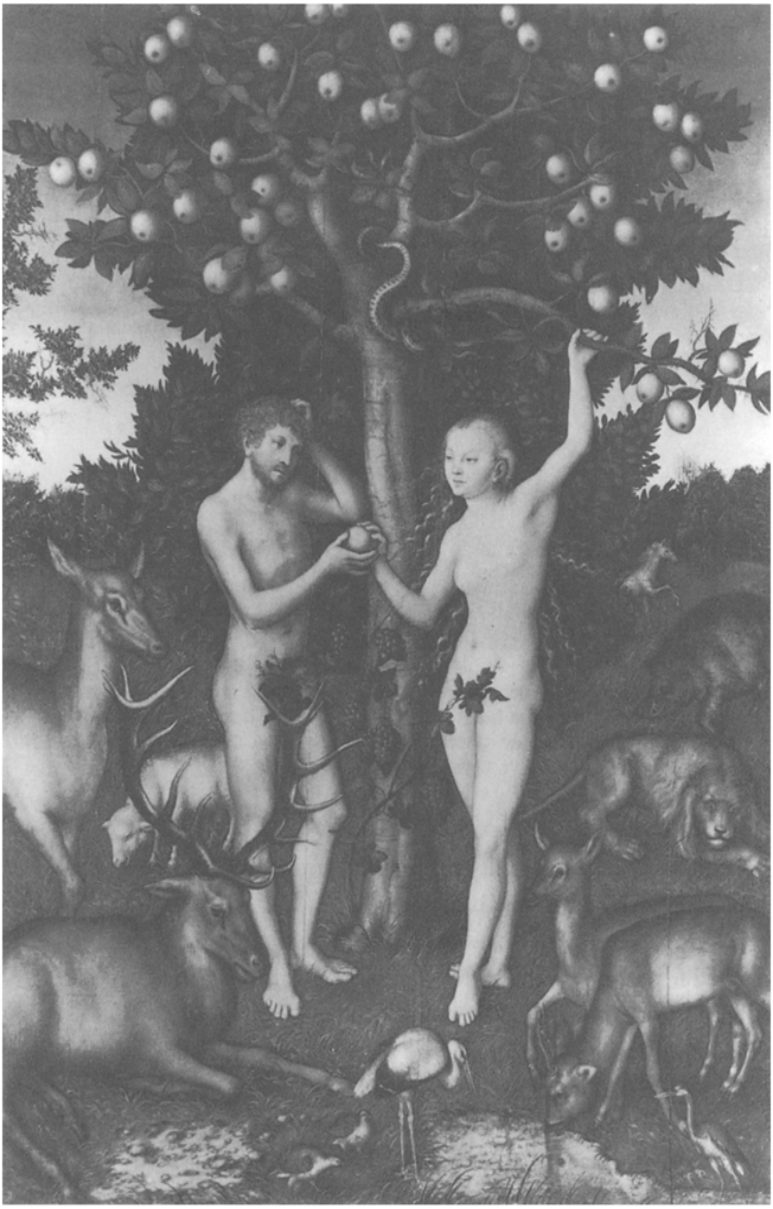

Fig. 3.3. Eve offers Adam an apple from the Tree of the Knowledge of Good and Evil in the Garden of Eden. *Adam and Eve,* Lucas Cranach, 1526. Courtauld Institute Gallery, Somerset House, London, used by permission

THE VIRGIN MARY AS GARDEN

Small enclosed gardens, symbols for the womb of the Virgin, were cultivated outside churches and monasteries in medieval Europe. Like the ancient goddesses of Mesopotamia and Egypt who awakened the fertility of the land, the Virgin Mary was associated with the fertility of the garden and the harvest of crops. Like the mother goddess Ishtar holding her son Tammuz on her lap and Isis suckling her son Horus, the virgin Mary cradles the infant Jesus. Art historian Pamela Berger, in *The Goddess Obscured,* traces the transformation of the Greco-Roman grain protectress Ceres (Demeter) into Mary, mother of the male Christ. Demeter is shown holding stalks of wheat, with serpents around her arms. By the eleventh century C.E., the grain protectress is shown nursing a serpent and cow. In later paintings, she appears with Adam and Eve on her lap, with the snake now depicted as the serpent of the Garden of Eden story. In the grain miracle stories of the medieval Christian church, the grain protectress was transformed into a saint, protecting the harvest from evil and miraculously causing grain to ripen as she passed. Over the course of time, Mary replaced Demeter, obscuring the pagan origins of the grain goddess and replacing her with a Christian symbol.[24]

The medieval enclosed gardens also symbolized the mysteries of womanhood, the sexual purity of the Virgin, and the association of virginity with the Garden of Eden. Christ grew in the womb of the Virgin Mary, just as the tree of life had grown in the Garden of Eden. A monk, by symbolically penetrating the womb of the Virgin, gained access to the mysteries of everlasting life once found in Eden. Sacred herbs facilitated the path to redemption. Their emblematic qualities could be ingested visually, psychically, or physically to simulate a resemblance between the individual soul and God.[25]

The enclosed garden was infused with sexual imagery. This *hortus conclusus* derived from erotic passages in the biblical Song of Solomon: "A Garden enclosed is my sister, my spouse; a spring shut up, a fountain sealed." In Geoffrey Chaucer's *Merchant's Tale* (c. 1386), the lover, Damyan, fabricates a key to unlock the circular garden and makes love to a maiden sitting in a fruit-bearing tree. In gaining access to the garden, the male lover simultaneously penetrates the female womb.

The enclosed garden not only symbolized sexual access to the inner secrets of nature, it contrasted sharply with the wilderness outside its walls. The sixteenth century French painting *St. Genevieve with her Flock* por trays the consecrated virgin (Patron Saint of Paris) with a flock of sheep encircled by a protective stone wall set on a hillside with trees and flowers. The wilderness outside the garden contains the thorns, thistles, and serpents of the desert as well as the wolves, bears,

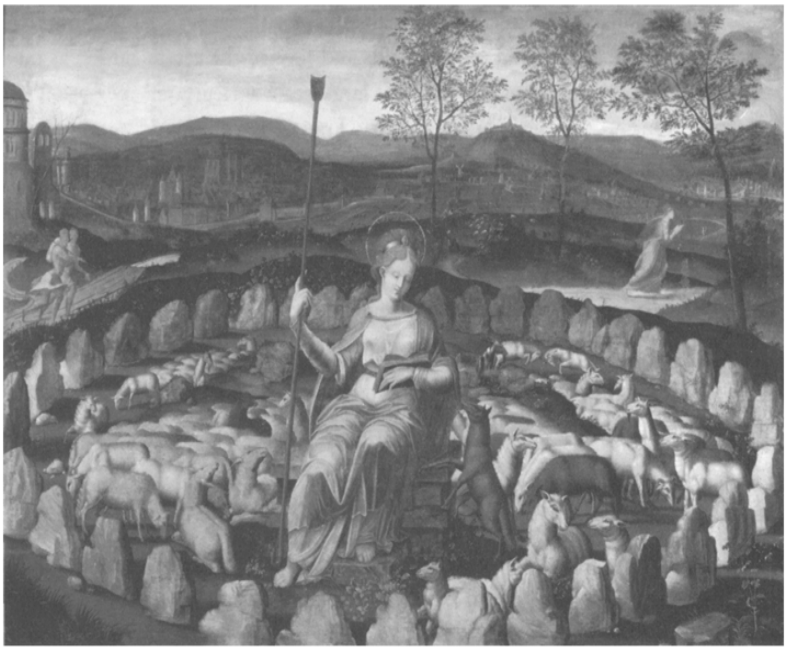

Fig. 3.4. The medieval enclosed garden, shown here as a circle of stones protecting St. Genevieve and her flocks, symbolized an Edenic age in which humans and animals lived in harmony. St. Genevieve *Guarding her Flock* (Oil on canvas) by French School, 16th century, Musée de la Ville de Paris, Musée Carnavalet, Paris, France, archives Charmet/Bridgeman Art Library, used by permission

and stags of the dark forest. These wild beasts reveal a fallen nature run amok, depicting the landscape of the Fall from Eden.[26]

The enclosed garden of the medieval world exhibits the potential for the practice of a partnership ethic between people and the earth, inasmuch as the garden is small and can be tended by a caring gardener who assists the earth in bringing forth life. The small-scale garden and the cooperative field system of the medieval period could fulfill both human needs and nature's needs for the reproduction of life. But the symbolic associations of the enclosed garden that posit domesticity against a negative wilderness and female against male undercut its potential for a sustainable partnership. The direction of mainstream culture was away from the small-scale garden and rotated fields and

toward the estate garden as display of power and the plantation as large-scale agriculture.

During the seventeenth century, Francis Bacon would combine the idea of a fallen nature caused by Eve's disobedience with the idea of regaining the garden by penetrating the female womb. His Recovery project proposed wresting from nature "her" secrets in order to recover the dominion lost in the Fall (see chapter 4). This story, written by Bacon and the fathers of modern science from the "book of nature," presented the possibility of recreating the entire earth as a new Eden. It was propelled both by a new hope of restoring the perfection of Adam and by the millenarianism of the late Middle Ages.[27]

MILLENARIAN OPTIMISM

The redemption of fallen humanity and the fallen earth at the millennium is described in the biblical Book of Revelation. From this source, Joachim of Fiore (1135–1202) constructed a dramatic historical narrative that gave hope of restoring the earth and recovering the Garden of Eden. History's narrative structure now moved from the Creation (where Adam and Eve lived within God's garden) to the Fall (which severed man from God) to the Redemption, when humanity recovered the garden and the tree of life and returned to the original oneness with God. History had three ages, corresponding to the Father, the Son, and the Holy Spirit. The Old Testament began with the Creation and the Fall and covered the period through the Incarnation of Christ, while the New Testament spanned the Incarnation to the Last Judgment envisioned in Revelation. Joachim's narrative thus reversed the tragedy of the Fall to the comedy of creating a New Earth through the Second Coming of Christ.[28]

Millenarian sects anxiously awaited the Second Coming and the salvation and new life it promised. The year 1000 represented a rupture, or apocalyptic moment in history. The three nines of 999 and 1999 and the three zeros of 1000 and 2000 are numbers with cosmic import. The year 1000 was viewed as "an evening of the world," and as the year 999 progressed, cultural and artistic work in the monasteries of Europe came to a halt in anticipation of the millennium.[29]

The hope of creating the new earth through technology was suggested by John Scotus Erigena as early as the ninth century. Erigena called for the mechanical arts to assist humanity in its Recovery of the dominion lost by Adam in the Fall. Although Adam had full knowledge of the "useful arts," he had lost those insights through original sin. Like Plato, Erigena believed that humans once possessed full knowledge of truths

that were now obscured in mankind's fallen state, Study of the arts, however, could assist humanity in regaining its initial state of perfection. The mechanical arts were humanity's link to God, and their pursuit was a means to redemption. Erigena suggested that recovery of the arts would restore fallen man to his state of original perfection and oneness with God.[30]

Influenced by Erigena, the twelfth-century canon, Hugh of St. Victor, concurred that developing the crafts in the present fallen world could contribute to the restoration of original perfection. Michael Scot (ca. 1175–1253) and Vincent de Beauvais (d. 1264) followed Hugh of St. Victor, proposing that "the primary purpose of the human sciences is to restore fallen man to his prelapsarian condition."[31]

The Franciscan scholar and scientist Roger Bacon (ca. 1210–1292) brought together Joachim of Fiores narrative—that the end of history was the advent of a new earth—with the idea that humanity could restore its likeness to God through the mechanical arts. He advocated that these arts should be developed to prepare for the final battle against Satan (the Antichrist), and human knowledge lost in the Fall must be restored. The restoration story that took shape during the Renaissance coincided with the development of the mechanical arts—mills, pumps, gears, bridges, and presses—that processed natures resources into items useful for the improvement of "man's estate." The great technological breakthroughs of the Renaissance—the printing press, the compass, and gunpowder— helped to propell the explorations of the New World and the trade of the emerging nation-states.[32]

EDEN MAPPED AND EXPLORED

The New World explorations were next steps toward first finding and then recreating Eden on earth. On his third voyage in 1498, Christopher Columbus believed he had discovered the Garden of Eden on the mainland of what is now known as South America. Here, "in the land I call Gracia, I found quite a mild climate where the land and the trees are as green and lovely as the orchard of Valencia in April." He associated the four rivers he found there with. the four rivers flowing out of Eden. In a letter he wrote, "Holy scripture testifies that Our Lord made the earthly paradise and in it placed the tree of life, and from it issues a fountain that produces the four great rivers of the world, the Ganges, the Tigris, the Euphrates, and the Nile. I do not find in any of the writings of the Romans or Greeks anything that establishes the location of this earthly paradise, nor have I seen it authoritatively placed on any map of the world. I do not believe that the earthly paradise in is the form of a

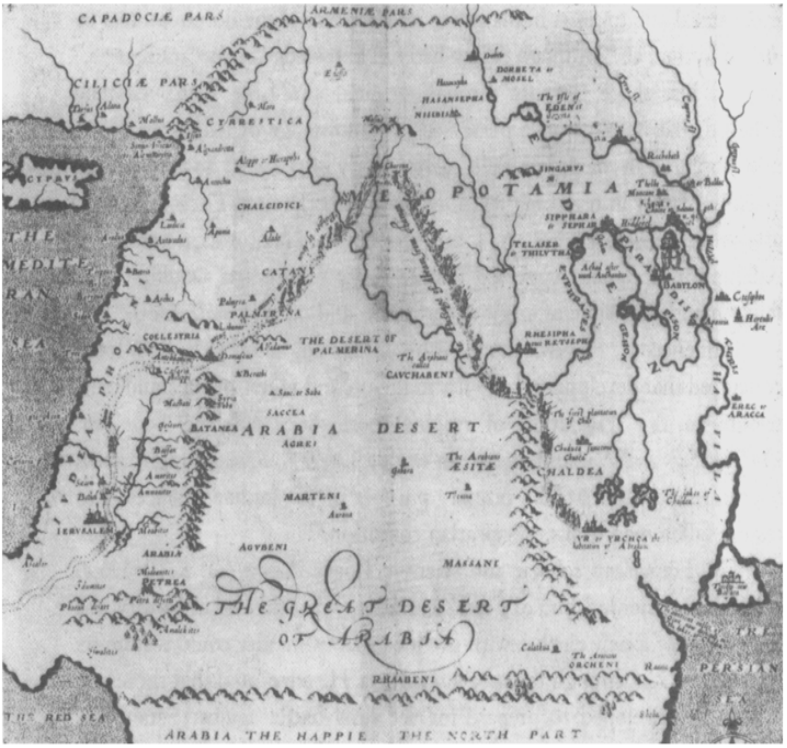

Fig. 3.5. Sir Walter Raleigh depicted the Garden of Eden, with its two trees and four rivers (the Tigris, Euphrates, Pison, and Gihon) flowing from it, in Mesopotamia. Sir Walter Raleigh, *The History of the World* (1614). Courtesy of the Bancroft Library, University of California, Berkeley

rugged mountain as it has been described. Instead, I believe that it is at the summit of this pearlike protuberance, to which one can gradually ascend…here I have found all the signs of this earthly paradise."[33]

Other explorers corroborated this Edenic description of the new lands of the Americas. In 1518 Alonxo da Zuarza called Hispaniola "an enchanted island where the fountains play, the streams are lined with gold, and where nature yields her fruits in marvellous abundance." The flowers of America reminded Amerigo Vespucci of Eden, while Simão di Vasconcelos located the earthly paradise in Brazil.[34]

Others located Eden in the Old World. Sir Walter Raleigh, in his 1614 *History of the World,* mapped Eden across the Arabian Desert in Mesopotamia. He depicted paradise and the four rivers flowing from it—

the Tigris, Euphrates, Gihon, and Pison—beside an image of the tree of the knowledge of good and evil; Adam and Eve were shown below the tree. PD.Huet's *De la situation du paradis terrestre* (1691) also set the terrestrial paradise in Mesopotamia near the Persian Gulf. Solomon van Til concurred. In 1719 he depicted Eden as a forest plantation of regularly planted trees located in Mesopotamia.[35]

A new attitude of mastery over nature accompanied the rise of mercantile capitalism made possible by both New and Old World explorations. As trade quickened in the northern countries of Europe, entrepreneurs mined the earth for metals, cut the forests for ships, and constructed roads, bridges, and mills. Nobles enclosed their fields for private use, producing grain and wool for local and international markets. Pasture sizes increased and an agricultural improvement movement stressed higher yields. Medieval symbols were traded for modern representations appropriate to the emerging capitalist economies.

RECREATING THE EARTHLY EDEN

Having discovered the apparent location and remnants of Eden, scientists took the next step in constructing the modern Recovery Narrative: they attempted to re-create the Garden of Eden physically. Seventeenth century botanical gardens and zoos were among the earliest efforts to reassemble the parts of the garden dispersed throughout the world after the Fall and the Flood. The scattered parts were collected and reassembled in one place to re-create the book of nature. Formal gardens were designed, planned, and superimposed on the "natural" landscape and meticulously maintained by the modern gardener. The gardens at Padua (1545), Leyden (1587), Oxford (1621), and Paris (1626) were laid out in squares with numbered beds and central fountains. They featured plants collected from the four quarters of the globe—Asia, Africa, Europe, and America. These ordered gardens symbolized both an improvement of nature through labor and an improvement of the human condition.[36]

During the seventeenth century, the "gamekeeper cultures" of the medieval period became the "garden cultures" of the modern world. According to sociologist Zygmunt Bauman, the premodern rulers or feudal lords were more like gamekeepers than monarchs. The gamekeeperlord maintained his territory in a state of self-reproduction rather than molding and cultivating it in accordance with a preconceived plan as would a modern gardener. The "wild" plants and animals, including humans, lived off their own resources in response to time-

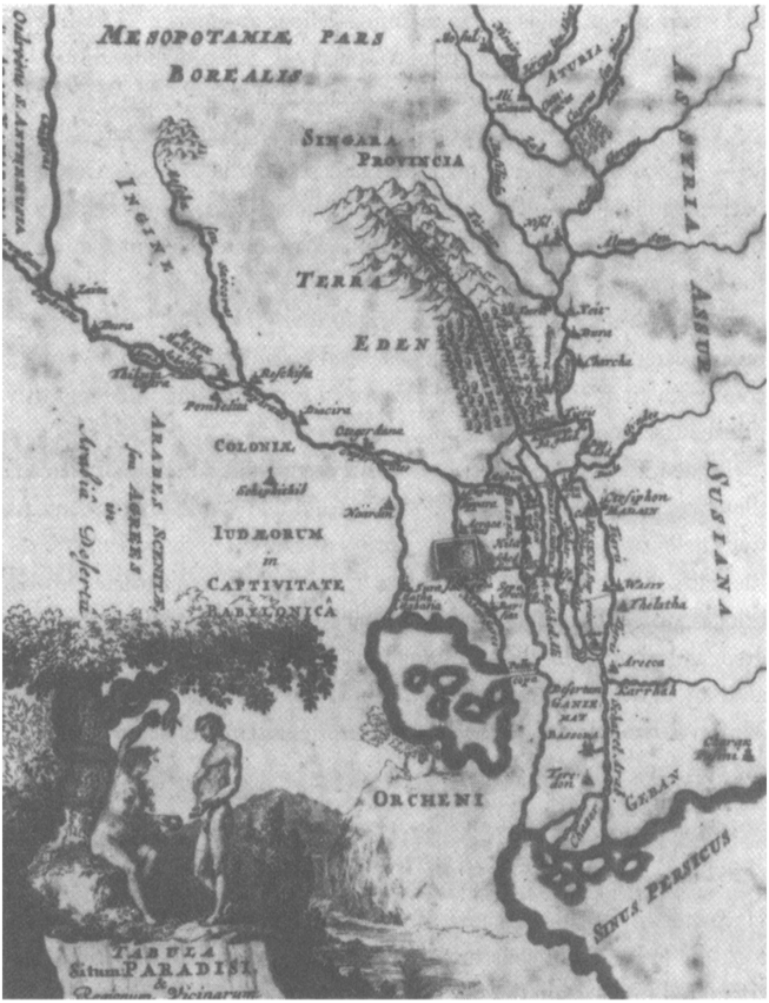

Fig. 3.6 Salomon van Til envisioned "Terra Eden" as a forest plantation in Mesopotamia, watered by mountain snows, out of which flowed the four Biblical rivers. Til, Salomon van. *Dissertationes philologico—theologicae*. Lugd. Batav., 1719, Tabula paradisi [map]. General Research Division, The New York Public Library, Astor, Lenox and Tilden Foundations.

evolved habits. The gamekeeper-ruler acted as a supervisor, or guardian, of this existing order. The earth continued to produce its own

goods, while the game-keeper guarded against "illegal" poaching by outsiders for the sake of his own subjects.[37]

The garden cultures of modernity, epitomized by the formal organization of Louis XIV's (1643–1715) palace and grounds at Versailles, represented a new form of social order. As opposed to a refuge against the wild, the modern garden was an active intervention in nature that remade the wild into the tame. The nobility's vast rectangular gardens displayed the power and wealth of the upper classes over both nature and the lower orders of society. The ornately walled gardens, with their carefully tended geometric beds of flowers, elaborate statuary, and elegant fountains that could be turned on and off to amaze visitors demonstrated the control of nature and society made possible through wealth.[38]

The stately garden of modernity had to be maintained against the encroachment of the social wilderness just outside its boundaries. In addition to the weeds, pests, and wild beasts that could undermine the garden's inherent order, there were social undesirables. Immigrants, minorities, misfits, and the dregs of society had to be kept beyond the garden gates. As opposed to feudal gamekeepers, modern gardeners required a higher level of self-conscious hubris to organize the land and society. They remade the entire territory around them in the image of a new social order. They developed and transmitted new techniques for ruling and maintaining an emerging political order through the power of the modern state.[39]

Yet the formal garden represented only the nascence of a much wider project to transform the entire earth into a garden. Elites came to believe that Eden could be re-created not only by assembling its pieces into gardens and zoos and by laying out geometrical patterns on the estates of nobles, they embraced the far grander vision that the whole earth could be reinvented as a second Eden.[40]

In settling the New World, a new earth could be reconstructed using the original garden as the paradigmatic ideal. The earth could be plowed, cultivated, and improved as people mixed their labor with the soil. Science and technology would be the means of transforming nature, while labor in the earth would be the means of saving human souls. Both the cultivated earth and cultivated humans could be prepared for the final moment of redemption, or parousia, when earth would merge with heaven to restore the original oneness.

The Recovery of Eden through its reinvention on earth is premised on the transformation of wilderness into garden. Nature must move from outlaw to law. This transformation of nature as active force to nature as law is reflected in the Renaissance distinction between *natura naturans*

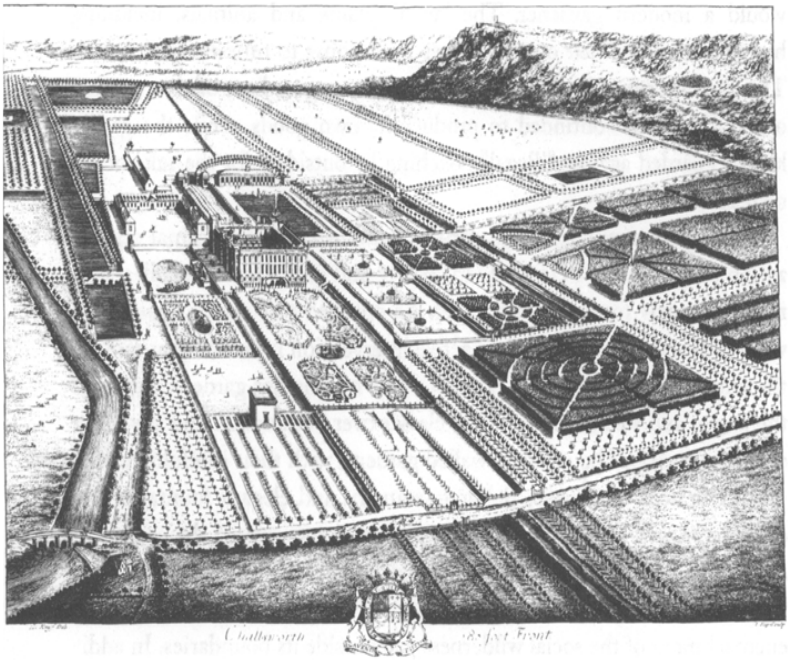

Fig. 3.7. The formal garden of the early modern world was a display of power that ordered the land in geometrical patterns, sharply demarcating the civilized world from the mountainous wilderness beyond. "Chatsworth Garden," reproduced from Johannes Kip, *Britannia illustrata* (London: H.Overton and J.Hoole, 1709), courtesy William Andrews Clark Memorial Library, University of California, Los Angeles

(nature naturing) and *natura naturata* (nature natured). As Eustace Tillyard explains in *The Elizabethan World Picture,* "This giving a soul to nature— nature, that is, in the sense of *natura naturans,* the creative force, not of *natura naturata,* the natural creation—was a mildly unorthodox addition to the [levels of] spiritual or intellectual beings…. [Richard] Hooker, orthodox as usual, is explicit on this matter. [Nature] cannot be allowed a will of her own…. She is not even an agent… [but] is the direct and involuntary tool of God himself."[41] Nature's chaos must be subdued.

CONCLUSION

Renaissance thinkers believed that both nature and human nature could be managed by natural law. To do so, the state of nature as an unruly and unpredictable form of "natural" society needed to become the predictable, manageable state of civil society.The unpredictability of nature's droughts, diseases, and disasters needed to be tamed. During the seventeenth century, the Genesis narrative of the Fall into wilderness and the medieval story of the Fall and Salvation would be converted to the modern Enlightenment story of the Recovery of Eden on earth. The declensionist narrative depicting a precipitous fall from Eden to desert, the slide downward from golden age to Iron Age, from original wisdom to ignorance, was reversed by hope of Recovery Both nature and human nature were capable of redemption. The way upward could be found through science, technology, capitalist development, and a new vision of the modern state.

FOUR
From Wilderness to Civilization

> WHEN I LOOK BACK, THE GARDEN is A DREAM TO ME. IT WAS BEAUTIFUL, SURPASSINGLY BEAUTIFUL, ENCHANTINGLY BEAUTIFUL; AND NOW IT IS LOST, AND I SHALL NOT SEE IT ANY MORE…. I HAVE LEARNED A NUMBER OF THINGS, AND AM EDUCATED NOW, BUT I WASN'T AT FIRST. I WAS IGNORANT AT FIRST…. IT IS BEST TO PROVE THINGS BY ACTUAL EXPERIMENT; THEN YOU KNOW; WHEREAS IF YOU DEPEND ON GUESSING AND SUPPOSING AND CONJECTURING, YOU WILL NEVER GET EDUCATED.
>
> *—Mark Twain, "Eve's Diary"*

Recovering the lost Eden became Western culture's major project during the Scientific Revolution of the seventeenth century. Reason and experiment were the keys to reinventing Eden on earth. During this century-long transformation, the Fall and Salvation narrative of the Middle Ages was secularized. Rather than an escape from the earth to a heavenly Eden, the new narrative remade the planet in the image of the lost Eden. Explorations of the New World, expanding capitalism, and the rise of science and technology stimulated new visions for the mind and new possibilities for the land. In this chapter I argue that a secular Recovery Narrative took shape that offered a new story within which members of a rising middle-class could live their lives. Upward mobility, provided by expanding industries in Europe and property ownership in New World colonies, sparked the hopes of many for a better worldly life. In the Protestant countries of northern Europe, human labor was glorified as the means of improving nature. Nature could be reshaped to reclaim the lost Eden, while New World Edens could be settled and improved. A new scientific understanding of God

as the laws of a rationally apprehended universe paved the way to the Enlightenment of the eighteenth century. God's glory in the world was celebrated through nature and nature's laws.

The new secular Recovery Narrative emerged from both a real and perceived decline of nature. Natural resources were exploited and depleted in the making of the modern world. Forests were cut, swamps drained, rivers dammed, common lands enclosed, wildlife decimated, and biotic diversity depleted. During the same period, elites lamented the "decay of nature," as order in both society and the cosmos seemed to be breaking down. Here I will show how an environmental narrative of declining resources and the "decay of nature" prepared the way for the mainstream, secular Recovery Narrative. My own view is that however beautiful and compelling the Scientific Revolution's analysis of nature as a mathematical order may be, its very success also implicates it in the domination of nature. The very linearity and determinism of its mathematical analysis, combined with its construction of nature as passive and manipulable, preclude the possibility of a sustainable partnership. Nevertheless, the beginnings of environmental conservation and wilderness appreciation that become elements of a sustainable partnership begin to emerge by the late seventeenth century.

TRANSFORMING THE EUROPEAN ENVIRONMENT

During the twelfth and thirteenth centuries, populations all over Europe gradually increased, rising from around thirty six million in 1000 to about eighty million in 1300, stimulating the reclamation of arable and pasture lands from surrounding forests and wetlands. In 1000, the peninsulas and islands of Europe (Italy, Spain, Portugal, Denmark, the Netherlands, and the British Isles) had been about 5–10 percent forested; in France, Germany, and Austria a quarter of the land was in forests; and in central Europe and Scandinavia one to two-thirds of the land was forested. As towns grew, food surpluses produced in the countryside to feed townspeople increased pressure on arable lands, stimulating additional forest clearing. The heavy plow, invented in the sixth century, and the three-field system of agriculture, introduced in France around 800, spread across Europe during the ensuing centuries. The three-field system left one-third of the arable land fallow each year, while wheat, rye, oats, barley, and peas were rotated on the remaining two-thirds. Nature's unpredictability in the form of droughts, freezes, cold winters, storms, and climate variations often meant food shortages and famines. In many regions, soils became eroded and exhausted of nutrients.

Pasture and marginal soils were brought into production. By 1300, forest cover had dramatically declined over much of Europe.[1]

From the mid-fourteenth to the mid-fifteenth centuries, outbreaks of bubonic plague—another of nature's unpredictable actors—decimated populations. The "Black Death," so terrible in scope for the human populace, temporarily restored much of the land's fecundity. Forests grew back renewing timber supplies, marshes returned, and soils recovered fertility. Yet environmental recovery was short-lived as the European population again increased (from approximately ninety million in 1600 to around two hundred million in 1800). Population pressure was coupled with a new phenomenon—mercantile capitalism—that reshaped European land and life beginning in the sixteenth century.[2]

An inexorably expanding market economy, which arose in the city-states of Renaissance Italy and spread gradually to northern Europe, intensified medieval tendencies toward capitalism. Stimulated by the European discovery and exploitation of the Americas, the spreading use of money facilitated open-ended accumulation. Cities flourished as centers of trade and handicraft production, giving rise to a new class of bourgeois entrepreneurs. These new businessmen supplied ambitious monarchs with the funds and expertise to build strong nation-states, and their rise undercut the power of the landowning nobility. As commerce and trade expanded, forests were cut for lumber and charcoal, and cleared lands were turned into pastures. Between 1650 and 1750, large tracts of forested lands were cleared for agriculture and industry. Shipbuilding; tanning; glass, and soap making; and tin, lead, copper, and iron mining and smelting helped denude the forest cover. Swamps were drained, mine shafts sunk, and ore extracted from the "bowels of the earth." Streams were polluted, fish killed, and fields fouled with runoff. Everywhere, early capitalist development altered the landscape. In 1700, European land use comprised 230 million hectares of forests and woodlands, 190 million hectares of pasture lands, and 67 million hectares of croplands. By 1850, forests and wood lands had declined to 205 million hectares, while pasture had risen to 150 million hectares and croplands to 132 million hectares.[3]

FROM WILDERNESS TO CIVILIZATION

The emerging bourgeoisie adopted a new secular narrative that legitimated the changes wrought on the earth. Capitalism's origin story moves from desert wilderness to cultivated garden. In the new story, undeveloped nature is transformed into a state of civility, producing a

reclaimed Garden of Eden.[4] The wild is tamed, wilderness subdued. The Recovery of Eden Narrative is the story into which most Westerners have been socialized and within which we live our lives today. This story is one of converting wilderness into ordered civil society—creating a reinvented Eden— through science, technology, and capitalism.

In the sixteenth century, the most palpable forms of undeveloped nature were forests and wastes. Wild places were synonymous with uncultivated, uninhabited forests, wastes, and deserts. While woodlots on the edges of towns and fields were known and used, deep forests were dark and unknown—places in which one might become bewildered and lost. Wastes were open, unused lands with little vegetation. "Wilde" and "wylde" pertained to untamed animals living in a state of nature and to uncultivated, undomesticated plants. "Wild" persons were viewed as savage, uncivilized, rude, uncultured, licentious, unruly, and unpredictable.[5]

The term *wilderness* derives from teutonic terms dating back to the eleventh century, such as *wildern* (wild savage land), *wilddeor* (wild deer), and *wilddren* (wild man). Wilderness was a place in which travelers might lose their way and wander aimlessly without destination. Fairy tales and folk tales portrayed forests as evil places in which a hero or heroine might be abducted and led into temptation. Satanic rituals and witches gatherings were presumed to occur in evil haunts in the deep forest. In religious terms, lost in the wilderness meant a lost soul wandering in the present world, as contrasted with a future life in heaven.[6]

But *wildrenes* and *wylderne* could also mean a retreat, a place to worship God in the desert wilderness as described in the Bible. The wilderness was thus a place in which one could gain insights into the meaning of its opposite—civility. The inhospitable arid desert of the Old Testament contrasted sharply with the bountiful, fruitful Garden of Eden and with the promised land of milk and honey. The expulsion from the Garden into the wilderness equated the latter with the evil introduced when Eve submitted to the temptation of the serpent. The desert represented a land to be subdued and irrigated, a land whose fertility was tied to the scarcity of rainfall. Indeed, humanity had a mandate to "make the desert blossom as the rose (Isaiah 35:1)."[7]

The perception of nature as forested wilderness or desert became important in the modern era. For Protestants such as John Calvin, John Locke, the New England Puritans, and the pioneers who settled the American West, God had authorized human dominion over the earth.

Therefore forests and deserts ought to be improved by converting them to productive farms and gardens.[8]

The idea of "civilized society" contrasts with wilderness and postdates it. The word *civic,* which appeared in English literature in the late fifteenth century, pertained to a group of people living together as a community within a well-governed social order. To be "civil" was to act in a polite, courteous, and orderly manner. To become "civilized" was to be brought out of a state of barbarism, to be instructed in the arts of living, and to be elevated in the scale of humanity. A civilized person was enlightened, refined, and polished. The term *civilization* itself appeared in the eighteenth century and pertained to a developed or advanced state of human society.[9]

THE STATE OF NATURE

At stake in defining "civil society" as an antidote to the Fall from Eden was the very meaning of nature itself. The "state of nature" was the polar opposite of "civilization." Emerging during the Renaissance was a perception that bestial characteristics and animal-like passions in the human body and soul must be suppressed in all civilized humans. The opposites of wildness and animality were civilization and humanity. During the sixteenth century the lines drawn between animality and humanity, wilderness and civilization, disorder and order, sharpened. The wild, chaotic animal-like dances and sexual encounters of witches with the devil-goat at the witches' Sabbath revealed to "civilized" Europeans the weaknesses of women for the unbridled sexual lust of animal-like copulation and of errant males for the sins of sodomy and bestiality.[10]

Tales of wilderness in European and Anglo-Saxon folklore were dramatized by fifteenth- and sixteenth-century explorations of the New World. The "savages" of the new lands became symbols of the wildness and animality that could gain the upper hand in "civilized" persons. As European elite culture set itself increasingly above nature as represented by its own medieval past and by New World "savagery," a code of manners was adopted that advocated the suppression of beastlike qualities in humans and the transformation of wildness into civility.[11]

Knowing the habits of the "savages" of North America enabled elite Europeans to characterize themselves as civilized and their own society as civil. The voyages of discovery and descriptions of America by New World colonists were used to define the meaning of wild and by extension the meaning of "civilized." Persons living in the "state of

nature" were presumed to be lawless. Wild men, it was argued, had no laws, religion, property, or manners. In his *Natural and Moral History of the Indies* (1604), Joseph de Acosta asserted that the first men to inhabit the Indies were "savage men and hunters," who then "bred up" into "civill and well governed Common-weales." In 1609, Garcilaso de la Vega observed that New World natives "lived like wild beasts without religion, nor government, nor towns, nor houses, without tilling or sowing the soil, or clothing or covering their flesh Like wild beasts they ate the herbs of the field and roots of trees and fruits growing wild and also human flesh."[12]

The 1607 settlement of Jamestown in North America engendered mixed reactions concerning Indians. In 1609, a Virginia colonist found people who lived "like herds of deer in the forest." Indians were seen as being as "wilde" as "wilde beasts." While some accounts portrayed Indians as happy in the state of nature, "courteous, gentle of disposition" and "civil and merry," the Virginia Massacre of 1622 that killed many of the Jamestown colonists, reinforced European fears of Indians as wild, brutish, and savage.[13] Indians, like nature, could be chaotic and unpredictable. Contributing to the perception of nature as an unruly and lawless place therefore were human experiences of the deep forest, biblical accounts of the desert as wilderness, the witch trials of the sixteenth and early seventeenth centuries, and perceptions of New World peoples as wild and savage. Such factors pointed to the need to restore order to society and nature.

THE DECAY OF NATURE

The idea of nature as a lawless place was reinforced by the apparent decay in the cosmos itself. By the late sixteenth century, the medieval worldview of a hierarchically ordered, immutable cosmos was breaking down. The hierarchy of the heavens, that moved upward from the earth to the moon, through the seven spheres of planets, to the fixed stars and empyrean heaven, was challenged by the work of Copernicus (1473–1543). His 1543 book *On the Revolutions of the Heavenly Spheres* placed the sun in the center of the cosmos and removed the earth to the third sphere. Tycho Brahe's (1546–1601) observations of a new star in the heavens in 1572 and of comets blazing across the sphere of the fixed stars introduced the idea of corruptibility and decay in the cosmos. In 1609, Johannes Kepler's (1571–1630) *New Astronomy* demonstrated that the planets moved in elliptical orbits, challenging the notion of perfectly circular paths. Galileo Galilei's (1564–1642) observations with the telescope in the *Sidereal Messenger* (1610) showed the moon

to have craters, the sun to have spots, Jupiter to have moons, and Venus to have phases. To elite Europeans, these observations reinforced biblical notions that the decay of nature had been introduced into the world by the Fall of Man.[14]

Godfrey Goodman's *The Fall of Man,* published in 1616, carried the theme of death and decay a step further. In the Fall from Eden, humanity not only introduced death to itself, but to all of nature. The parts of man and of nature had all declined from a perfect state of youth to old age, decay, and ultimately death. The Fall introduced decay into the human body, or microcosm, which in turn produced corruption in the larger world, or macrocosm. The decay of nature was evidenced by the decline of fish in the seas, infertility in the soils, and corruption in the heavens themselves (such as spots on the moon and comets that marred the perfection of the heavenly spheres). That nature needed repair, Goodman held, was shown by the development of technology While the ancients had not needed agriculture, living as they did in a state of abundance, the moderns, who were in a state of decline, needed it to restore the lost fertility of nature.[15]

Other writers concurred that the Fall of Man had introduced death and decay into nature itself. The seventeenth-century poet Henry Vaughan (1622–95) wrote that man "drew the Curse upon the world, and Cracked the whole frame with his fall."[16] Henceforth, he "sighed for Eden" and longed "for home." In *Paradise Lost* (1668), John Milton (1608–74) wrote that when Eve ate the apple, "Earth felt the wound, and Nature from her seat,/Sighing through all her works, gave signs of woe." The earth "trembled from her entrails," "Nature gave a second groan," and the sky "wept at completing of the mortal Sin Original."[17] But for some writers, the idea of nature's decay was set within a larger story of cyclical decay, followed by the rebirth of the earth.

THE SACRED THEORY OF THE EARTH

Thomas Burnet's *Sacred Theory of the Earth* (1684) presented an epic narrative of the decline of the earth. The story began with the Creation, and proceeded to the Fall, and then the decay, and conflagration of the entire world. The destruction, however, ended with the subsequent rebirth of the earth, thus holding out hope of regaining paradise. Like the Christian Edenic and Greek golden-age theories, Burnet's narrative began with a perfect earth in perpetual spring, lapsed into a fall and period of decay, out of which it entered a new period of rebirth and rejuvenation. The earth, Burnet believed, was formed out of chaos with the four elements all in their proper spheres, earth at the center, water on

the surface, air above, and fire beyond. The original earth was "smooth, regular, and uniform; without Mountains, and without a Sea." The earth known by Adam and Eve was one of perfection, as befitted a paradise.[18]

After the fall from Eden came the Great Flood, initiating decay throughout the entire surface of the once perfect earth. In the flood, the "Earth was broken and swallowed up," and "Nature seem'd to be in a second Chaos." Storms raged on the seas; forests and cities were drowned. The irregular, malformed earth that resulted was the earth of the present era.[19]

The next stage of the earth, Burnet predicted, would be its conflagration. The fire would begin in Rome, seat of the Antichrist. After the burning ceased, paradise would be reproduced and the thousand-year reign of Christ on earth would begin. A second race of men would then arise on the new earth. This "new Order of Nature" would last until the new race rose in final conflict destroying Satan, at which time the Saints would rise to heaven, and the earth itself would become a fixed star. At that point the "whole Circle of Time and Providence" would be completed.[20]

Burnet's sacred story of the earth's decay and conflagration represented the acme of the millennial religious narratives that saw the history of the world in pessimistic terms as a Fall followed by Salvation. It appeared during the same decades that the optimistic story of upward progress was emerging. By the 1620s, the secular, mainstream Recovery Narrative was beginning to take shape under the pen of Francis Bacon.

FRANCIS BACON'S RECOVERY NARRATIVE

Modernity's vision of the Recovery of Eden derives most immediately from philosopher Francis Bacon (1561–1626). Lord Chancellor to King James I, who had commissioned the King James version of the *Bible,* Bacon was a prolific and persuasive writer. In the 1620s, he energetically proclaimed a secular program for recovering paradise. Bacon believed that the human race had lost its "dominion over creation." Before the Fall, Adam and Eve were sovereign over all other creatures and "like unto God." Bacon saw science and technology as the means to control nature and thereby recover the right to the original garden: "Man by the Fall, fell at the same time from his state of innocency and from his dominion over creation. Both of these losses can in this life be in some part repaired; the former by religion and faith, the latter by arts and science." He boldly asserted that "man" can *"recover* that right over nature which belongs to it by divine bequest…." Bacon's narrative

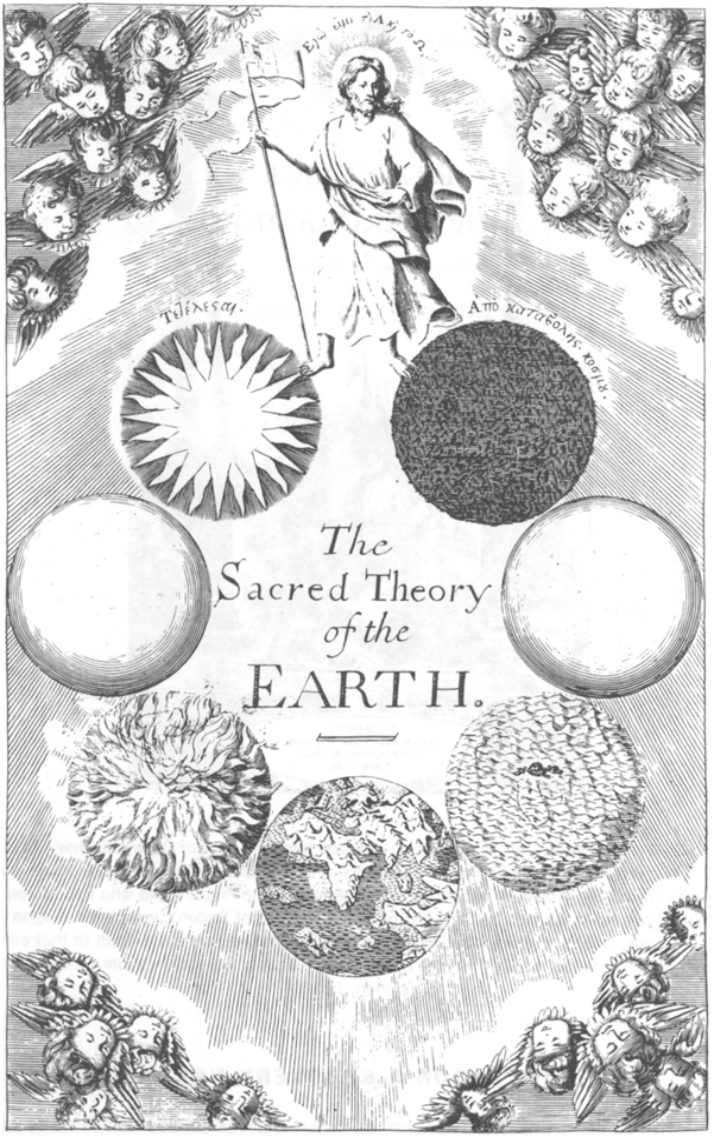

Fig. 4.1. Thomas Burnet's cyclical theory of history represented the creation of the perfect earth, followed by the Flood of Noah whose receding waters produced the malformed earth of the present era. After the present Earth's conflagration, a New Earth would be formed and a new race would destroy Satan, at which time the Saints would rise to heaven and the Earth would become a fixed star. Thomas Burnet, *The Sacred Theory of the Earth* (1684), courtesy of the Bancroft Library, University of California, Berkeley

Fig. 4.2. The frontispiece of Francis Bacon's (Baron Verulam) *Novum Organum (New Organon),* 1620, showed a ship sailing between the Pillars of Hercules bearing knowledge of the world. In Greek mythology, Hercules undertook a voyage to set free Prometheus who had stolen fire from the gods for mankind's benefit. The book formed part of Bacon's *Instauratio Magna (The Great Instauration),* or reorganization of the sciences and restoration of man to that command over nature lost in the Fall from Eden. Francis Bacon. *Novum Organum* (1620; reprint London, 1856)

plot reversed the decay of nature. It moved from the tragedy of the Fall upward to the comedy of survival and recovery.[21]

The principal villain in Bacon's secular Recovery Narrative was nature, cast in the female gender. Although Eve's inquisitiveness may have caused "man's" Fall from "his" God-given domain, for Bacon the

relentless interrogation of nature (as fallen Eve) could regain it. Bacon used the inquisition and the courtroom as models for cross-examination of nature: "I mean (according to the practice in civil causes) in this great plea or suit granted by the divine favor and providence (whereby the human race seeks to *recover* its right over nature) to examine nature herself and the arts upon interrogatories."[22]

Salomon's House, in Bacon's *New Atlantis* (1624), carried the Recovery theme further. Rather than extolling the traditional erotic or contemplative entry into the virgin's womb described in the biblical Song of Solomon, Bacon advocated a forceful entry into nature's womb through the Song of Science. In the "new Atlantis," plants and animals were actively manipulated "for the relief of man's estate." Interrogating nature through experiment, the Baconian scientists of Salomon's House could recover the human dominion over nature lost by Eve. Since the Fall, nature had become chaotic and plants and animals wild and uncontrollable. But scientists could restore order to the garden by inventing docile, domesticated plants and animals, such as those in the original Garden of Eden.[23] Other philosophers realized even more clearly than did Bacon the connections among mechanics, the trades, middle-class commercial interests, and the domination of nature. Increasingly, they spoke out in favor of "mastering" and "managing" the earth for the benefit of humankind.

THE MECHANICAL WORLDVIEW

During the seventeenth century, the Christian narrative of dominion over nature was combined with science, technology, and capitalist development to reinforce the possibility of remaking the earth as a controlled, managed Garden of Eden. Social values of order and control paved the way toward acceptance of a new narrative of dominion over nature. The mechanical worldview created by the "fathers of modern science" drew on philosophical assumptions consistent with the power of machine technologies to control the natural world. Early capitalist development was based on watermills, windmills, furnaces, forges, cranes, and pumps that transformed and multiplied the energy of sun, wind, wood, and coal to produce ships, guns, cannons, ammunition, cloth, paper, planks, flour, glass, and a myriad of iron implements and utensils. The large pumping, milling, and lifting machines found everywhere in daily life made plausible a model of nature as a machine. The cosmos was likened to a clock that regulated time in equal units. God was depicted as a clockmaker, mathematician, and engineer who constructed and directed the world from outside.

In the 1620s, French natural philosophers Marin Mersenne (1588–1648), Pierre Gassendi (1592–1655), and René Descartes (1596–1650) revived and placed in a Christian context the ancient atomic theories espoused by the Greek pagan philosophers Democritus (460 B.C.E.) and Epicurus (341–270 B.C.E.) and the Roman poet Lucretius (98–55 B.C.E.). For the mechanists, it was God who created the atoms and put them into the cosmos at the beginning of time. The world was composed of material particles in motion that combined and separated to form the external world.

For Descartes, motion was not inherent in the corpuscles themselves, but was put into the world by God at the beginning of the cosmic story and transferred from one particle to another. God sustained the created world from instant to instant throughout time. Owing to God's immutable intellect, the laws of nature were both unchanging and intelligible to the human mind. The external (extended) world of nature was described in terms of measurable quantities such as size, weight, and speed. The internal (unextended) world of the mind was the source of clear and distinct ideas—the basis for truth. The logic underlying the mathematical method was the key to valid knowledge of the external world. Mathematical descriptions of the material world were the ground of certainty and yielded the laws of nature. In his *Discourse on Method* (1637), Descartes argued that through knowing the forces of bodies we could "render ourselves the masters and possessors of nature."[24]

The assumption that nature was subject to law-like behavior meant that phenomena could be reduced to orderly predictable rules, regulations, and laws. Sir Isaac Newton's laws of mechanics and the principle of gravitation, put forward in his 1687 *Mathematical Principles of Natural Philosophy,* described the actions of the "world machine." His mechanical worldview, fully formulated by the end of the seventeenth century, restored "law and order" to a society in chaos from the wars of religion, the English civil war, and the collapse of Ptolemy's earth-centered cosmos.[25]

Modern science depends on a structural reality that allows for the possibility of control whenever phenomena are predictable, regular, and subject to natural laws. The assumption of the order of nature is fundamental to the concept of power over nature, and both are integral components of the modern scientific worldview. Such a worldview, grounded in the prediction, management, and control of nature, is completely consistent with a Christian narrative of remaking the world in the image of the Garden of Eden. By the late seventeenth century, Christianity's idea of dominion over nature had merged with science,

technology, and capitalism to form the secular, mainstream Recovery Narrative.[26]

PARADISE AND PROPERTY

The mainstream Recovery Narrative entailed reshaping the earth and manipulating its resources. While science and technology made the material transformation of nature possible, capitalism gave the emerging bourgeoisie the economic tools to change the earth. Capitalist development involved a new view of property. The premodern European tradition had associated property with the principles of hierarchy and patriarchy. God had established social rules at the creation that were passed down from Adam to succeeding generations. Property maintained the social order of monarchs and feudal lords by transferring family lands through the male line. Women could hold moveble property and were themselves forms of movable property who could be controlled by men. Authority and inequality were accepted as both proper and natural. These principles, sanctioned by the biblical story of the order of creation, ruled every aspect of life from the family upwards to the community, society, and the cosmos.[27] But the emerging bourgeoisie substituted a new origin story for the evolution of private property out of the "state of nature."[28]

The acquisition of private property was the key to humanity's progress from the "state of nature" into ordered civil society. As early as 1625, Dutch statesman Hugo Grotius (1583–1645) maintained that private property had been created through stages of development when "common ownership, first of movable objects, later also of immovable property, was abandoned." In 1651 English Philosopher Thomas Hobbes's (1588–1679) *Leviathan* described the "state of nature" as a place in which there were no arts or letters and where civil society itself could not even exist.[29] By 1672, German jurist Samuel Pufendorf (1632–94) had combined Grotius' view of private property with Hobbes's concept of nature. "The race of man," Pufendorf said, "never did live… in a simple state of nature." When Adam gave his children permission to set up different establishments, he wrote, "those things [were] made property which [were] immediately and indivisibly of use…." Private property therefore could be extracted from nature.[30]

Ownership of private property became an integral part of the emergence of civilization from the state of nature. To be civilized was to impose order on personal life; civilization represented the imposition of order on the land. Laying out an orderly grid on the landscape enclosed land within a boundary, creating the potential for its ownership

as private property The bounds of that "improved" property separated it from the wild. Outside the boundary was disorderly wilderness, inside ordered civilization. The civil was thus imprisoned within the wild—an enclosed garden that offered protection from external disorder in either nature or society.

JOHN LOCKE'S CIVIL SOCIETY

English philosopher John Locke's (1632–1704) *Two Treatises of Government* (1690) set out the ideals of the new "civil society" that viewed the entire earth as an ordered garden. Today most people read only the "Second Treatise," relegating the first to the dustbins of an arcane past. But the two treatises must be read together to grasp why Locke's version of history turned the received story of his day upside down. Locke used his expert storytelling skills to reconstruct the past. His new ordering of information was designed to convince members of both his own and opposing political persuasions. His narrative bolstered the case that government received its mandate from the order of nature in the form of parliament, not from the *Bible* in the form of monarchy[31]

Locke's work fits squarely on the cusp between the premodern and modern traditions. His new story showed that property was essential to the possibility of a reclaimed earthly paradise. He convincingly asserted that those who owned property had received their authority to govern from nature, not as a divine right from God. His new story thus wrested power from monarchs and placed it squarely in the hands of the bourgeoisie.[32]

Locke challenged the King's ownership of property by calling on the Christian doctrine of human dominion over nature. Even before land became private, he argued, creatures in the state of nature could be owned by individuals. After the Fall, the human race retained its dominion over "every living thing that moveth on the Earth." In Locke's story, God did not intend that a king have dominion over other human beings, but "only the Dominion of the whole Species of Mankind over the inferior Species of Creatures," those created on the fifth and sixth days, namely cattle (tame animals), beasts (wild animals), and reptiles (creeping animals).[33]

God reaffirmed mankind's rule over nature after the Flood, when Noah and his sons were given dominion over the "Fowls of the Air, the Fishes of the Sea, and the Terrestrial Creatures." These creatures, Locke proclaimed, became the property of "Man" because they were essential to his self-preservation and survival. They were used to fulfill individual needs, even before the advent of private land ownership.

Thus, "Man's *Property* in the Creatures was founded upon the right he had, to make use of those things, that were necessary or useful to his Being." Property, therefore, derived first and foremost from a person's "natural right" to use the "inferior Creatures" for subsistence and even to destroy them to fulfill basic needs. The state of nature, not the monarchy, therefore legitimated the existence of private property.[34]

Locke further challenged the old story of the divine right of kings by creating a new story in which civil society itself arose out of "the state of nature." In the tradition of the new science, Locke used a series of logical arguments, but it was his brilliant new story that became historically persuasive. To convince his audience, he first rewrote the story of the Fall of Adam and Eve from paradise and then showed how the human race could recover from the Fall.[35] His Recovery of Eden story is embedded in the text of his *Two Treatises of Government.* We can extract the underlying narrative logic in five "chapters:" the Creation; the Fall; the State of Nature; the Evolution of Private Property; and the State of Civil Society.

"Chapter 1," as extracted from Locke's *First Treatise,* begins with the creation of Adam and Eve. God made Adam a "perfect man, his body and mind in full possession of their strength and reason." He gave Adam the ability to act according to "the dictates of the law of reason," so he could provide for his own support immediately and completely. As man and wife, Adam and Eve constituted the first society. In Locke's new story, Eve is a modern woman. Although she was subjugated to her husband Adam, as women in Locke's day were considered to be, Locke gives her reason and includes her in the dominion over the other creatures. In a further innovative move, he significantly lets her have property in these creatures. Living in the original Eden, therefore, nature is experienced by the first couple as peaceful; human beings are by nature altruistic; and society, as constituted by the first couple, is potentially egalitarian.[36]

Locke's next "chapter," like the Bible's, details a radical disjunction: humanity falls out of Eden into "the state of nature." Here again Locke makes the story consistent with the modern world for which he is writing. In his version of the Fall, Adam and Eve have retained their God-given ability to reason. After the Fall, they became the first parents. Because the children were products of natural birth, rather than God's immediate action, they were born with undeveloped powers of reason. While subject to the "law of nature," they required maturity to fully understand and act according to the laws of reason. In Locke's narrative, reason and dominion over nature afforded the first couple and their successors the possibility of reversing the Fall. The state of nature

retained its paradisiacal potential. But nature was worthless until they acted to transform it into a new paradise.[37]

In Locke's third "chapter," the progeny of Adam and Eve continue in the state of nature, where they are free to act according to their own conscience. They continue to live in this state until they voluntarily form a community and begin to act as a political body. When people agree on a common government and set of laws to live by—and where the possibility for judicial appeal exists—they can move out of the state of nature to a new life in the state of civil society.[38]

PRIVATE PROPERTY AND THE RECOVERY OF EDEN

The fourth "chapter" of Locke's narrative makes the final bold leap that creates capitalism's origin story as arising out of the state of nature through the evolution of private property. Locke recasts the mandate of Genesis 1:28 ("Be fruitful and multiply, and replenish the earth, and subdue it"), incorporating what are now modern society's concepts of appropriation, property, cultivation, improvement, and money directly into his own biblical account of subduing the earth. "The law [that] man was under was for appropriating," he asserted. "God commanded, and [man's] wants forced him to labor." Locke thus sets out the conditions necessary for mercantile capitalism: the transformation of undeveloped nature through labor and private property into civilized society.[39]

In the course of the long climb out of "the state of nature" into the recovered Eden, private property emerges in three stages. It evolves from gathering, hunting, and fishing to farming, and from farming to marketing commodities. First the extracted product, then the land, and finally the fabricated commodities become an individual's property to be bartered or exchanged for money. An extracted product, such as an acorn, becomes an individual's property from the moment it is gathered and continues to be personal property through each ensuing stage: bringing it home, cooking it, and eating it. Similarly, property emerges at each stage of the hunt, from the point of spotting a deer, to pursuing and capturing the animal, and finally to eating it, when the ingested meat has become one's own bodily property. Even fish captured from the ocean, "the last great common," Locke asserts, become the property of the fisher.[40]

Locke's second stage of property development entails the activity of farming the land. Land and labor together create property Extending Genesis 1:28, from merely subduing the earth to *enclosing* land from the commons and *owning* it as private property, Locke writes: "That

was his property which could not be taken from him wherever he had fixed it. And hence subduing or cultivating the earth, and having dominion, we see are joined together. The one gave title to the other."[41]

The third stage of property development is commerce (or commercial capitalism). At this stage an individual produces commodities for exchange according to the "agreed-upon" standard of money. The seventeenth century growth in commercial enterprise generated increased production and exchange of food. But commerce also required the construction of stone quarries, coal mines, saw mills, iron works, fulling mills, cloth-dying vats, brick works, furnaces, and ships. Gold, silver, and diamonds provided the medium for exchange and the incentive to increase the number and value of the goods produced. Land could be accumulated and gold and silver could be "hoarded up," leading to an unequal distribution of wealth.

Locke argued that such accumulation was fair, because it was done by the "tacit and voluntary consent" of society as a whole.[42] The progressive accumulation of goods and improvement of land was morally justifiable because it did not deprive anyone of the possibility of individual ownership. Locke reasoned that there was still plenty of land in the world for every person to acquire their own plot, even if the population were to double! Hence, acquisition of private property held no moral onus. Moreover, governments could regulate the amount of land an individual could own, even though people could still accumulate private possessions.[43]

The fifth and final "chapter" of Locke's Recovery Narrative is the creation of civil, political society. When people move out of nature into civil society, they have vanquished the state of nature. Only war or the dissolution of government can cause a relapse—a new lapsarian moment. Locke presents civil society as a peaceful state in which people act as one political body. Any number of people can consent to give up their "natural liberty" and "put on the bonds of civil society," leaving the rest behind in the state of nature.[44] Property is the incentive that causes them to give up their natural liberty. People will give up the power of self-preservation and individual punishment of others in the "unsafe" and "uneasy" state of nature in exchange for legislative and judicial protection in the state of civil society. The gain is peace, civility, and protection of private property.[45]

Locke's new version of history made him the dominant storyteller of his age. His narrative of Fall and Recovery set up his story as the new natural story. No longer is Adam the father of kings, no longer are people mere subjects of a divinely derived monarchy Locke presents the emergence of "civilized man" from the state of nature by domination,

the appropriation of nature by ownership, and the transformation of gathered goods into items of trade and commerce as the "natural" upward course of events. Future writers would elaborate and expand this basic storyline, turning it into the idea of progress. Locke's first chapter of the Fall from Eden would quickly become a mere prologue to the assumed trajectory of civilization's rise from the state of nature into modernization. The state of nature was accepted as a fallen world that could be reshaped and reconstituted as an improved garden, an ordered landscape, a redeemed earth.[46]

ADAM SMITH'S CAPITALIST NARRATIVE

During the eighteenth century, Adam Smith and others elaborated on the Baconian-Lockean Recovery Narrative. In contrast to Locke, who had concentrated on the consequences of the Fall, Smith focused exclusively on progress. He described four phases of economic development: "The four stages of society are hunting, pasturage, farming, and commerce." While Locke's story had omitted the pastoral stage and only begun to include the implications of commercial capitalism, Smith's narrative set out a "Newtonian" system of capitalist economic laws. Smith argued that the two lower stages of hunting and pasturage should eventually be replaced by the two higher stages of agriculture and commerce in an interlinked system. Both Locke and Smith agreed that the emergence of private property was central to the progression.[47]

Smith's system of the four stages of the development of civil society was worked out and delivered in his lectures at Glasgow University during the 1750s and '60s. It appeared in the posthumously published *Lectures on Jurisprudence* (compiled by a student in 1762–63) and in the *Wealth of Nations* in 1776. In his lectures, Smith connected each developmental stage to a mode of subsistence and a form of law and government. He cited Grotius, Hobbes, Pufendorf, and Locke as predecessors of his the-ory. Smith was critical of Jean-Jacques Rousseau's romantic version of "the savage life" which, he said, presented "only the indolent side" of "primitive" life. Smith's four-stage theory linked ideas of human social development with the Enlightenment concept of progress. Both ideas became very influential during the latter half of the eighteenth century.[48]

An interpretation of the state of nature as potentially good but worthless without improvement is integral to the Enlightenment's narrative of Recovery through progress, property, and polity. While nature has the potential to provide humans with the necessities of life, it

is doomed to lie in waste unless transformed by human intellectual and physical labor (science and technology). But nature is also the source of the moral order that guides human development away from evil and toward good. Human society, through the administration of justice, can overcome those deficits that arise from a fallen nature and a fallen human nature.[49]

Smith argued that nature instills conscience in humans, helping them to carry out God's plan. But nature as actress can also be recalcitrant and mean, so that "she" herself must be kept in check by systems of science, technology, and justice. People must be prepared to override an unjust nature in favor of the divine plan originally imposed by God; thus, "man is by Nature directed to correct, in some measure, that distribution of things she herself would otherwise have made."[50]

Smith's reassessment of history constructed a "master narrative" in which males were the human heroes who raised society to ever higher economic levels, while women's labor was largely invisible. As Kathryn Sutherland points out, "The consumer economy which Smith celebrates declares at once the feminising properties of commodities and the strict masculine preserve of commercial activity. Establishing the ascendancy of the market place within a progressive society involved…its redescription as feminine space and its appropriation as the primary ground for the construction of male subjectivity in the person of the master-manufacturer…. Over two hundred years later, the question remains—where are the women in the wealth of nations?"[51]

The role that Smith and others assigned to men in the creation of property and polity fused premodern patriarchy with modern capitalism. It was men's role to keep unruly women, nature, and "uncivilized" peoples in check; it was civilization's role to keep wilderness in check. While private property was initially a sheltered enclosure within the wild, as capitalism became the dominant world system, property came to enclose the wild as an enclave within civilization. Order and rule surrounded the disorderly and unruly Just as outlaws were incarcerated within the prison system, so the wild was incarcerated within the civilization system.[52]

THE ROOTS OF ENVIRONMENTAL CONSERVATION

Development of natural resources during the period of mercantile capitalism that spanned the late Renaissance to the Enlightenment produced an awareness of environmental decline and the need for its reversal through conservation. Here the possibility of environmental

recovery begins to counter the downward trajectory of environmental decline. In England, a tremendous toll had been taken on the nation's forests as trees were cut for the shipbuilding and iron industries and for pasturing sheep for the clothing industry. Air and water pollution increased in urban areas due to iron manufacture, glassmaking, brewing, dying, lime burning, salt and soap boiling, and other small industries that depended on coal, wood, and charcoal. In 1661, diarist John Evelyn presented King Charles II with his book *Fumifugium,* a report on air pollution. In response to the problem of burning "sea-coal," a highly sulphurous coal that caused pneumatic distress among Londoners, Evelyn recommended that wood be substituted for coal by reforesting the woodlands surrounding the city. He also suggested that the substitution of coke for smelting be instituted, chimney heights increased, and flowers planted to offset the noxious odors of the sea-coal.[53]

In *Silva, A Discourse of Forest Trees and the Propagation of Timber in His Majesty's Dominions* (1662), Evelyn recommended that the decline of forests could be reversed by the replanting of trees. He noted that "prodigious havoc" had been wrought by the tendency to "extirpate, demolish, and raze…all those many goodly woods and forests, which our more prudent ancestors left standing." He recommended that England's forests be conserved, their trees replanted, and that laws be enacted to curtail cutting near navigable waterways. In France, Jean-Baptiste Colbert, minister to Louis XIV, reported to the king in 1661 that "France will perish for lack of woods." The French Forest Ordinance was passed in 1669 to reorganize the administration of the king's forests. The new method divided woods into equivalent sections to be harvested every 20 years while stands of large timber needed for shipbuilding were to be harvested every 120 years.[54]

The evolution of a conservation consciousness was supported by a new image of a designed universe with God as a wise conservator and humans as caretakers of nature. Theologian John Ray's *Wisdom of God Manifested 'in the Works of the Creation* (1691) argued that God expected humans to use nature's bounty to glorify their creator as they increased trade and prosperity throughout the globe. Gold and silver existed in the right abundance to use as money for commerce and trade. The abundance of life and resources on earth was evidence of the wisdom of God and his design of a "spacious and well furnished world." The present earth presented "natural advantages" to those willing to develop its vast variety of minerals, metals, animals, and plants. The "many pleasant and nourishing fruits, many liquors, drugs,

and good medicines," were placed there by a wise creator whose products should be used for the improvement of human life.[55]

Similarly, William Derham's *Physico-Theology* (1713) accepted the idea of a designed earth in which humans were stewards over the creation. God made men in his own image as wise conservators whose mission was to glorify God and improve the human condition. Derham quoted Matthew 25:14: "That these things are the gifts of God, they are so many talents entrusted with us by the infinite Lord of the world, a stewardship, a trust reposed in us; for which we must give an account at the day when our Lord shall call." Like Ray, Derham called for the use and commercial development of the earth's resources, stating, "We can, if need be, ransack the whole globe, penetrate into the bowls of the earth, descend to the bottom of the deep, travel to the farthest regions of this world, to acquire wealth…." Derham's language echoed that of Bacon and, like Bacon, his objective was the improvement of "man's estate," but by the late seventeenth century Derham could focus on the glory of God as manifested in the creation and humans as wise stewards of that creation. Just as God was the caretaker, steward, and wise manager of the natural world, so humans had a responsibility to imitate that mandate.[56]

In the conservation of John Evelyn and Jean-Baptise Colbert and the designed earth of John Ray and William Derham lie the roots of environmental recovery. Here an awareness of environmental decline wrought by improvident depletion of resources for commercial gain could be countered by conservation. Conservation was rooted in an ethic of human stewardship over creation while nevertheless supporting the growth of trade and commerce central to the mainstream Recovery Narrative.

THE EMERGENCE OF WILDERNESS APPRECIATION

The idea of a nature as a rational order that emerged during the Scientific Revolution led not only to conservation but to an aesthetic appreciation of nature. As civil society gained the upper hand over wild nature, an appreciation of the wild became possible. The disorder that remained outside the order of nature was divided into two states—the *negative wild* and the *positive wild.* The negative wild was exemplified by unruly passions aroused by the baseness of the body; the positive wild by the sublime passions of the soul. Poets and philosophers began to write about nature in terms of the emotions aroused by beautiful

scenery and sublime vistas. God appeared as the creator of an awesome universe in which even chaos and disorder took on positive meaning.

Beyond the pure mathematical analysis of the world, which appealed to the power of reason, were the senses and the passions by which people perceived and felt the outer world of nature. Descartes's separation of mind and body raised questions about the emotions aroused by nature. As Marjorie Hope Nicolson puts it in *Mountain Gloom and Mountain Glory,* "The Cartesian shears that had separated 'the world out there' from 'the mind in here' had laid upon thoughtful men a burden of discovering how nature affected the mind and how [the] mind knew nature." In respond ing to nature, reason and emotion could become fused. "Under the stimulus of 'extraordinary Ideas,'" states Nicolson, "Reason and Passion rise together to new heights, one affecting the other, until the Soul reaches that state of exaltation in which it both thinks more clearly and feels more vehemently than before." This experience was the apprehension of the sublime.[57]

In England, writers such as poet John Dennis (1657–1734), essayist Anthony Ashley Cooper (the third Earl of Shaftesbury, 1621–83), and playwright Joseph Addison (1672–1719) spoke of the "sublime" in their literary work. For Dennis, God's works evoked feelings of "delightful horror" and "terrible joy." Shaftsbury praised a diverse and abundant nature whose "wildness pleases" and which was created by a God of plenitude. In the *Pleasures of the Imagination* (1712), Addison distinguished between the "natural" and "rhetorical" sublime, with the former evoking the "primary pleasure of the imagination" and the latter only "secondary" pleasure.[58]

English philosopher Edmund Burke, in his *Philosophical Enquiry 'into the Origins of Our Ideas of the Sublime and the Beautiful* (1757), viewed forests, mountains, and waterfalls as sublime places. The sublime produced emotions of awe, astonishment, and dread. Burke wrote: "The passion caused by the great and sublime in nature, when those causes operate most powerfully, is Astonishment; and astonishment is that state of the soul, in which all its motions are suspended, with some degree of horror." In addition to the ability of nature to fill the viewer with awe, there were several related dimensions of the sublime. "Astonishment," Burke continued, "is the effect of the sublime in its highest degree; the inferior effects are admiration, reverence and respect." But the most noteworthy experience of the sublime was terror. The notion of the sublime was akin to the experience of terror and dread at the power of the Deity. "Indeed terror," Burke wrote, "is in all cases whatsoever, either more openly or latently the ruling principle of the sublime."

Burke compared the sublime and the beautiful in terms of their power to evoke feelings of awe and appreciation: "Sublime objects are vast in their dimensions, beautiful ones comparatively small; beauty should be smooth, and polished; the great, rugged and negligent…the great ought to be dark and gloomy; beauty should be light and delicate; the great ought to be solid, and even massive. They are indeed ideas of a very different nature, one being founded on pain, the other on pleasure."[59]

In German philosopher Immanuel Kant's *Observations on the Feeling of the Beautiful and Sublime* (1761), wilderness took on new and positive meanings. Like Burke, Kant distinguished between feelings of beauty and sublimity aroused by views of nature: "Finer feeling, which we now wish to consider, is chiefly of two kinds: the feeling of the sublime and that of the beautiful," he wrote. "The stirring of each is pleasant, but in different ways. The sight of a mountain whose snow covered peak rises above the clouds, the description of a raging storm, or Milton's portrayal of the infernal kingdom, arouse enjoyment but with horror; on the other hand, the sight of flower-strewn meadows, valleys with winding brooks and covered with grazing flocks, the description of Elysium…also occasion a pleasant sensation but one that is joyous and smiling."

According to Kant, there were several types of sublime feelings all nuanced with respect to the emotions generated: "The sublime is in turn of different kinds. Its feeling is sometimes accompanied with a certain dread, or melancholy; in some cases merely with quiet wonder; and in still others with a beauty completely pervading a sublime plan. The first I shall call the terrifying sublime, the second the noble, and the third the splendid."[60]

Looking at mountains—seeing God's action in the land through thunderstorms and lightning—was now looked upon not as the work of the devil but as evidence of God's power and goodness. The sublime was manifested in waterfalls, mountains, and canyons, and in sunsets, rainbows, and oceans. The idea of the sublime as a religious experience became an important component of the European Enlightenment. Nature was now cathedral, temple, and Bible.

CONCLUSION

During the seventeenth and eighteenth centuries, a set of ideas emerged that became central to the possibility of reinventing Eden on earth. The construction of a secular narrative of Recovery through Enlightenment was based on a particular set of assumptions about nature and society. The "state of nature" was a fallen world (represented by the female gender)

that could and should be improved by humans. The best state of nature was an ordered, improved garden rather than a forested wilderness or a barren desert. Human society could likewise develop from a fallen or "primitive" state to a higher or "civilized" state (through the agency of the male gen der). Agriculture and commerce were higher and more desirable forms of human life than hunting or pastoralism, and both improved the state of nature. Private property became a necessary condition for the emergence of settled agriculture and commercial capitalism as stages of upward progress. Acting through reason and nature, God sanctioned the recovery process.

At the same time, ideas of the wild and of wilderness were split into positive and negative valences. The negative wild encompassed those outside of civilization: the lower classes, minorities, "savages," and wild animals who must be controlled so that civilization could exist and against which it could define itself. The positive wild exemplified God's awesome power to affect the natural world. While human reason allowed humanity to understand God's laws and to explain the natural order, human passions allowed the apprehension of his awesome power as manifested through the majesty of wilderness.

By the late-eighteenth century, the mainstream story of Western culture had become a secular Recovery Narrative—a story of reinventing the whole earth as a Garden of Eden. It was this narrative, first in its earlier Baconian-Lockean form, and later in Adam Smith's more fully articulated capitalist form, that subtly guided and legitimized the European settlement and development of the American continent. Simultaneously, however, a counternarrative of wilderness appreciation was emerging among elites that would be expressed through poetry, art, literature, and landscape architecture.

In their emphasis on the domination and control of nature, the philosophers of the Scientific Revolution moved away from the possibility of partnership ethics. Yet in John Locke's assignment of reason to Eve can be found a positive potential for full participation by women in the understanding of nature, a trajectory realized two centuries later in Mark Twain's characterization of Eve (in this chapter's epigraph) as experimental scientist. Moreover, Eve's emotions of the Garden of Eden as "surpassingly beautiful" are shared by the men of the Enlightenment who express awe over the sublimity of nature. A partnership ethic, which depends on the full participation of men and women in the care of nature and the acceptance of nature's wildness, as well as its predictability, can be seen as latent in the two narratives of progress and decline.

PART II

New World Edens

EPILOGUE

> I HAD A VERY GOOD NAME FOR THE ESTATE, AND IT WAS MUSICAL AND PRETTY—GARDEN-OF-EDEN. PRIVATELY, I CONTINUE TO CALL IT THAT, BUT NOT ANY LONGER PUBLICLY. THE NEW CREATURE SAYS IT IS ALL WOODS AND ROCKS AND SCENERY, AND THEREFORE HAS NO RESEMBLANCE TO A GARDEN. SAYS IT *looks* LIKE A PARK, AND DOES NOT LOOK LIKE ANYTHING *but* A PARK.
>
> —*Mark Twain, "Extract from Adam's Diary"*

When Mark Twain wrote the *Diaries of Adam and Eve* in the 1890s, he made no reference to God as creator. Adam and Eve simply find themselves in the garden and set about the business of living. Eve is the scientist who experiments and observes, Adam the more uncertain and obedient of the two. Eve sets out to name and understand the new world; Adam escapes her and builds a solitary shelter. After the Fall into the real world, it is Adam who takes charge and Eve who follows him around just because he is masculine. In the end, however, Adam realizes that Eve means more to him than the lost garden and that indeed wherever she is, there is Eden. The *Diaries* are both a commentary on the realities of life in nineteenth-century America and a bold vision of its reversal in an Edenic world. Twain's insight remains refreshing although it is not one of partnership. My own vision is one in which both women and men are equally intelli gent, equally skeptical, and equally accommodating of each other. A partnership relationship goes beyond equality for women and men in the marketplace, beyond equality in the home and school. It involves mutual respect, mutual give and take, and mutual understanding of needs, as well as equal opportunities for education and work.

For Twain's Adam, Eden is a garden to be accepted as a backdrop to life; for Eve, it is a park to be explored, studied, and loved. Adam samples the grapes and melons; Eve gazes at the stars, revels in the flowers, and makes friends with the animals. After the Fall, Adam takes up hunting and fishing, and Eve gives up her experiments with fire, her questions about shooting stars, and her puzzlement over falling water to focus on love and child rearing. Eve's experience of Eden before the Fall comes closest to a partnership between humanity and nature. She is interested in everything about her world, but not in destroying it. She interacts with animals and plants as equals, not as a superior scientist who studies them for their usefulness only. Twain's *Diaries,* however, present nineteenth-century stereotypes of female and male responses to nature. Eve is the one who appreciates the color and majesty of nature in Eden; Adam is interested primarily in its practical value. In a partnership world, both women and men would have equal capacities for understanding nature's use value and an appreciation of its aesthetic value. Both would have equal abilities to use nature's gifts to fulfill vital needs and to respond to nature's need to simply *be.* Both would have equal capacities for love and child rearing.

A partnership ethic is only one part of a new narrative or set of narratives about the human relationship with nature. And new narratives are only one part of what is needed for a sustainable world. The global ecological crisis and the decline of nature need to be reversed by new ways of producing, reproducing, and interpreting life on the planet. Poverty, hunger, and sickness need to be reversed by new forms of economics, politics, and science. Minorities and third world nations need to be full participants in global economics and ecology. Ecological economics, organic farms and gardens, sustainable livelihoods, green politics, wild places, ecological designs, human-scale cities, reverence for nature, chaos and complexity theories, and partnership ethics are among many new ways to achieve a sustainable relationship with nature. Nature's fate and humanity's fate are deeply intertwined. May both survive and fully live.

NOTES

CHAPTER I

1. Issues concerning the corporatization of new American downtown strip malls appear in T.J.Sullivan, "Cookie Cutters Shaping U.S. Cities," *Ventura County Star,* Jan. 3, 1999, A1, A8.
2. Rachel Carson, *Silent Spring* (New York: Houghton Mifflin, 1962).
3. Lynn White Jr., "The Historical Roots of Our Ecologic Crisis," *Science* 55 (1967): 1203–7, reprinted in Ian G.Barbour, ed., *Western Man and Environmental Ethics: Attitudes Toward Nature and Technology* (Reading, Mass.: Addison-Wesley, 1973), 18–30; quotations on 25, 29. Lewis Moncrief, "The Cultural Basis of Our Environmental Crisis," in Barbour, ed., *Western Man and Environmental Ethics,* 31–42. See also Carolyn Merchant, The *Death of Nature: Women, Ecology, and the Scientific Revolution* (San Francisco: Harper Collins, 1980).
4. William Cronon, "A Place for Stories: Nature, History, and Narrative," *Journal of American History,* 4, no. 4 (1992): 1347–76, quotation on 1348. Cronon compared the plots of Paul Bonnifeld, *The Dust Bowl: Men, Dirt, and Depression* (Albuquerque: University of New Mexico Press, 1979) and Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (New York: Oxford University Press, 1979).
5. Donald Worster, "Ecology of Order and Chaos," *Environmental History Review* 14, nos. 1–2 (1990): 14–16; James Gleick, *Chaos: The Making of a New Science* (New York: Viking, 1987); M.Mitchell Waldrop, *Complexity: The Emerging Science at the Edge of Order and Chaos* (New York: Simon and Schuster, 1992).
6. Theodore Steinberg, *Down to Earth: Nature's Role in American History* (New York: Oxford University Press, 2002), 284.
7. On ideas of Eden and the golden age in cultures throughout the world, see Richard Heinberg, *Memories and Visions of Paradise: Exploring the Universal Myth of a Lost Golden Age,* rev. ed. (Wheaton, 111.: Quest Books, 1995). Heinberg states, "Our search has taken us from

Mesopotamia to Iran, Egypt, India, China, Australia, North America, and Africa. Everywhere, we have encountered essentially the same myth—the story of a primordial era when humanity and Nature enjoyed a condition of peace, happiness, and abundance…. If a single source did exist, the diffusion from that source must have occurred so long ago that the process of borrowing is now impossible to trace. The myth can just as easily be interpreted as having originated independently in many locations" (54); and further, "Two of these traditions the Hebraic and the Greek continue to shape Western values and ideals" (49). On tropical Edens, see Richard Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens, and the Origins of Environmentalism, 1600–1860* (New York: Cambridge University Press, 1995).

8. See Norman Cohn, *Noah's Flood: The Genesis Story 'in Western Thought* (New Haven, Conn.: Yale University Press, 1996); William B.B.Ryan, *Noah's Flood: The New Scientific Discoveries About the Event that Changed History* (New York: Simon and Schuster, 1998); and T.D.Kendrick, *The Lisbon Earthquake* (London: Methuen, 1956).

CHAPTER 2

1. Roy B.Chamberlain and Herman Feldman, *The Dartmouth Bible: An Abridgment of the King James Version, with Aids to its Understanding As History and Literature, and As a Source of Religious Experience* (Boston, Mass.: Houghton Mifflin,1961); Genesis 1:26–28; introduction, 9–10.
2. Chamberlin and Feldman, *Dartmouth Bible,* introduction, 8–9; Harold Bloom, ed., and David Rosenberg, trans., *The Book of J,* (New York: Vintage, 1990).
3. Chamberlin and Feldman, *Dartmouth Bible,* Genesis 2:7–22; introduction, 8–9. Everett Fox, ed., *The Five Books of Moses* (New York: Schocken, 1995), Genesis 2:23: "She shall be called Woman/Isha, for from Man/Ish she was taken." Adam is named in Genesis 2:19: "God formed every beast of the field, and every fowl of the air; and brought them unto Adam to see what he would call them." "Woman" is created in Genesis 2:21–22, but is not named Eve until after the couple's disobedience and punishment in Genesis 3:20: "And Adam called his wife's name Eve; because she was the mother of all living." The name Eve may have come from the Sumerian name Nin-ti, meaning "lady of the rib" or "lady of Life." See W.Gunther Plaut, ed., *The Torah, A Modern Commentary* (New York: Union of Hebrew Congregations, 1981), 30, n. 21. On the literature pertaining to the Adam and Eve story, see Michael E.Stone, *A History of the Literature of Adam and Eve* (Atlanta: Scholars Press, 1992); Gary A. Anderson and Michael E.Stone, ed., *A Synopsis of the Books of Adam and Eve,* 2d ed., revised (Atlanta: Scholars Press,

1998); Kristen E.Kvam, Linda S.Schearing, and Valarie H.Ziegler, ed., *Eve and Adam: Jewish, Christian, and Muslin Readings on Genesis and Gender* (Bloomington: Indiana University Press, 1999); Gary Anderson, Michael Stone, and Johannes Tromp, ed., *Literature on Adam and Eve: Collected Essays* (Leiden: Brill, 2000); Paul Morris and Deborah Sawyer, ed., A *Walk in the Garden: Biblical, Iconographical, and Literary Images of Eden* (Sheffield, Eng.: Sheffield Academic Press, 1992); John R.Levison, *Texts in Transition: The Greek Life of Adam and Eve* (Atlanta: Society of Biblical Literature, 2000).

4. Theodore Hiebert, *The Yahwist's Landscape: Nature and Religion in Early Israel* (New York: Oxford University Press, 1996), 32–35.
5. Hiebert, *The Yahwist's Landscape,* 53–55, quotations on 55 and 53.
6. Chamberlin and Feldman, *Dartmouth Bible,* Genesis 3:1–7, 22–24; Bill Moyers, *Genesis: A Living Converstaion* (New York: Doubleday, 1996), 67; Hiebert, *The Yahwist's Landscape,* 33–35.
7. Evan Eisenberg, *The Ecology of Eden* (New York: Alfred A. Knopf, 1998), 86–89, quotation on 87.
8. J.Baird Callicott, "Genesis Revisited: Muirian Musings on the Lynn White, Jr. Debate," *Environmental Review* 14, nos. 1–2 (1990): 65–92, esp. 81. Moyers, *Genesis,* 71–76. See Genesis 1:29–30; Genesis 2:9; Genesis 3:18, 19, 23; Hiebert, *The Yahwist's Landscape,* 40–41.
9. J.L.Russell, "Time in Christian Thought," in *The Voices of Time: A Cooperative Survey of Man's Views of Time As Expressed by the Sciences and Humanities,* ed. J.T.Fraser (Amherst: University of Massachusetts Press, 1981), quoted in Max Oelschlaeger, *The Idea of Wilderness: From Prehistory to the Age of Ecology* (New Haven, Conn.: Yale University Press, 1991), 67.
10. Genesis 1:31; Genesis 2:6–7; Genesis 3:1, 14, 18.
11. Victor Rotenberg, "The Lapsarian Moment" (unpublished manuscript, University of California-Berkeley, 1993); Henry Goldschmidt, "Rupture Tales: Stories and Politics in and Around the Garden of Eden" (unpublished manuscript, University of California, Santa Cruz, 1994), quotations on 8–9; I thank Victor Rotenberg and Henry Goldschmidt for sharing their manuscripts with me. As postmodern philosopher Jacques Derrida puts it, the story is an ontotheology "determining the…meaning of being as presence, as parousia, as life without difference"; see Derrida, *Of Grammatology,* trans. Gayatri Chakravorty Spivak (Baltimore: Johns Hopkins University Press, 1976), 71.
12. *Oxford English Dictionary,* compact ed., 2 vols. (Oxford: Oxford University Press, 1971), vol. 1., s.v. "Eden"; vol. 2, s.v. "paradise"; Plaut, *The Torah,* 29, note 8. In the Jewish tradition, Eden is the home of the righteous after death. On time in the Christian tradition, see Oelschlaeger, *The Idea of Wilderness,* 65–66.

13. Jeffrey L.Sheler, "The Christmas Covenant," *U.S. News and World Report,* Dec. 19, 1994, 62–71, esp. 66. Religious sects differ as to forms of millennialism. Premillennialists, such as fundamentalist and evangelical Christians, believe a catastrophe or final battle of Armageddon will initiate the age of Christ on earth. Postmillennialists argue for Christ's return only after a golden age of peace on earth brought about by working within the church. Antimillennialists, who include most Protestants and Roman Catholics, do not accept the one-thousand-year reign of Christ on earth, but instead believe in a period prior to the final resurrection in which Christ works through the church and individual lives.
14. A.L.Moore, *The Parousia in the New Testament* (Leiden: E.J.Brill, 1966), 2, 3, 5, 16, 17, 20, 21, 25–26, 28. Moore notes "The divine intervention in history was the manifestation of the Kingdom of God…. [T]his would involve a total transformation of the present situation, hence the picture of world renewal enhanced sometimes by the idea of an entirely supernatural realm" (25–26). Further, "Concerning the central figure in the awaited End-drama there is considerable variation. In some visions the figure of Messiah is entirely absent. In such cases 'the kingdom was always represented as under the immediate sovereignty of God.'" (21)
15. The concept of a recovery from the biblical Fall appears in the seventeenth century. According to the *Oxford English Dictionary,* recover is " [t]he act of recovering oneself from a mishap, mistake, fall, etc."; vol. 2, s.v. "fall." See also Bishop Edward Stillingfleet, *Origines Sacrae* (London, 1662), II, i, sec 1.: "The conditions on which fallen man may expect a recovery"; William Cowper, *Retirement* (1781), 138: "To… search the themes, important above all Ourselves, and our recovery from our fall"; and Richard Eden, *The Decades of the Newe Worlde or West India* (1555), 168: "The recoverie of the kyngedome of Granata." The term *recovery* also embraced the idea of regaining a "natural" position after falling and a return to health after sickness. It acquired a legal meaning in the sense of gaining possession of property by a verdict or judgment of the court. In common recovery, an estate was transferred from one party to another. See John Cowell, *The Interpreter* (1607), s.v. "recoverie": "A true recoverie is an actuall or reall recoverie of anything, or the value thereof by Judgement." Another meaning was the restoration of a person or thing to a healthy or normal condition, or a return to a higher or better state, including the reclamation of land. [See anonymous,] *Captives bound in Chains…the misery of graceless Sinners, and the hope of their recovery by Christ* (1674); Bishop Joseph Butler, *The Analogy of Religion Natural and Revealed* (1736), 2:295: "Indeed neither Reason nor Analogy would lead us to think…that the Interposition of Christ… would be of that Efficacy for Recovery of the World, which Scripture teaches us it was"; Joseph Gilbert, *The Christian Atonement* (1836), 1:

24: "A modified system, which shall include the provision of means for recovery from a lapsed state"; James Martineau, *Essays, Reviews, and Addresses* (1890–91), 2:310: "He is fitted to be among the prophets of recovery, who may prepare for us a more wholesome future." John Henry Newman, *Historical Sketches* (1872–73) 2:1:3:121: "The special work of his reign was the recovery of the soil."

16. On the tragic and comic visions of the human, animal, vegetable, mineral and unformed worlds, see Northrup Frye, *Fables of Identity* (New York: Harcourt Brace, 1963), 19–20.
17. Bloom and Rosenberg, *The Book of J,* 62; A.Cohen, ed., *Soncino Chumash, or, Five Books of Moses with Haphtaroth* (Hindland, Surrey, Eng.: Soncino Press, 1947), 11; Plaut, ed., *The Torah* (1981), 30; Aryeh Kaplan, trans., *The Living Torah: The First Five Books of Moses and the Haftarot* (New York: Mazanim, 1981), 9; *Tanakh* (1985), 5; Arthur S.Maxwell, *The Bible Story,* rev. ed. (Hagerston, Md.: Review and Herals Publishing Association, 1994), 47–49. Kaplan, *The Living Torah* says, "Your passion will be to your husband and he will dominate you" (Genesis 3:16). The King James version of the Bible and the 1947 *Soncino Chumash* call both the animals and the woman "help meets"; the 1981 Plaut edition of *The Torah* and the 1985 *Tanakh* refer to them as "fitting helpers;" Kaplan's 1981 *Living Torah* denotes them "compatible helpers," while Everett Fox, ed., *The Five Books of Moses* (New York: Schocken Books, 1995) uses "a helper corresponding to him." *The Book of J,* thought by Harold Bloom to have been written by a woman, calls both the animals and the woman (created to help Adam "tend" and "watch" the Garden of Eden) "partners" (Genesis 2:18, 20). The children's *Bible Story* (1994) calls them "mates," while Eve is Adam's "life companion."
18. Plaut, *The Torah,* 28, 32. Victor Roland Gold, et al, ed., *The New Testament and Psalms: An Inclusive Version* (New York: Oxford University Press, 1995) translates God as Father-Mother. The Lord's Prayer (Matthew 6:9–10) thus reads "Our Father-Mother in heaven, hallowed be your name. Your dominion come."
19. Phyllis Trible, quoted in Plaut, *The Torah,* 33, n. 15. On Eve as the first scientist see Mark Twain, "Eve's Diary," in *The Diaries of Adam and Eve* (replica of the 1904–5 1st ed.), in *The Oxford Mark Twain,* ed. Shelley Fisher Fishkin (New York: Oxford University Press, 1996).
20. Ray Maria McNamara, Graduate Theological Union, Berkeley, personal communication with the author. Reverend William Moore Boyce Jr., Richmond, Virginia, a free translation of Genesis 2:18; Genesis 1:28 and 31 (1998): "Then the Lord God said: 'It is not good for humans to be alone. I will make them helpers, partners, and colleagues to each other'…. So God created humankind in God's own image, in the image of God they were created, male and female they were created, and God saw the whole creation and indeed it was very, very good."

21. A.Cohen, *The Soncino Chumash, 7* note. The King James version of the Bible and the *Soncino Chumash* translate the Genesis 1:28 passage in almost identical terms, using the familiar terms *subdue* and *dominion:* "And God blessed them and God said unto them: 'Be fruitful and multiply and replenish the earth and subdue it; and have dominion over the fish of the sea and over the fowl of the air, and over every living thing that creepeth upon the earth.'" Cohen notes that the Hebrew word for *subdue* could be read as applying only to the singular individual ("subdue thou it") and therefore was "addressed only to man whose function it is to subdue, but not to woman." The New Century version of the *Bible* (1987) reads, "Have many children and grow in number. Fill the earth and be its master. Rule over the fish of the sea…." Here mastery and rule are the message. Plaut's edition of *The Torah* (1981) also replaces the words "subdue it" with "master it," while changing "have dominion over" to "rule." It reads, "God blessed them and God said to them, 'Be fertile and increase, fill the earth and master it; and rule the fish of the sea, the birds of the sky, and all the living things that creep on earth.'"The *Tanakh,* a new translation of the *Torah* rendered in 1985, like the 1981 Plaut version, uses "increase," "master," and "rule." Harsher, however, is the translation in Kaplan *The Living Torah,* which uses "conquer" and "dominate." The passage reads, "God blessed them. God said to them, 'Be fertile and become many. Fill the land and conquer it. Dominate the fish of the sea, the birds of the air, and every beast that walks the land.'" A new translation rendered by David Seidenberg ("Some Texts from the Torah on the Relationship between Humanity and Nature," unpublished manuscript, 1993), employs "conquer" (as does the Kaplan edition), while also translating the land as female: "And Elohim blessed them and said to them, 'bear fruit and increase and fill up the land and conquer/ occupy her and prevail over the fish of the sea and over the bird of the skies and over every animal crawling on the land.'" For more information see Jeremy Cohen, *"Be Fertile and Increase, Fill the Earth and Master It:" The Ancient and Medieval Career of a Biblical Text.* (Ithaca: Cornell University Press, 1989). These comparisons among Genesis 1:28 renderings in the Christian and Judaic traditions seem to confirm the mandate to populate, "subdue," "master," "rule," and "conquer" the (female) land. Encoded into Western culture, such language was used historically to justify spatial expansion, colonial territories, manifest destiny, and the westward conquest of other peoples and lands.
22. Plaut, *The Torah,* 39; Lynn White Jr., "The Historical Roots of our Ecologic Crisis," *Science* 155 (1967):1203–7, reprinted in Ian Barbour, ed., *Western Man and Environmental Ethics: Attitudes toward Nature and Technology* (Reading, Mass.: Addison Wesley, 1973), 18–30, quotation on 25.

23. René Dubos, "Conservation, Stewardship, and the Human Heart," *Audubon,* September 1972, 21–28, quotation on 27; see also Dubos, "A Theology of the Earth," in Ian G.Barbour, ed., *Western Man and Environmental Ethics,* 43–54; Robin Attfield, *The Ethics of Environmental Concern* (New York: Scribner's, 1974); and Bruce Babbitt, "Stewards of Creation," *Christian Century,* 113, no. 16 (1996), 500–503.
24. Plaut, *The Torah,* 38.
25. Cohen, ed., *Soncino Chumash* (1947), 10; Plaut, ed., *The Torah* (1981), 30; Kaplan, ed. *The Living Torah* (1981), 9; *Tanakh* (1985), 5; Bloom and Rosenberg, *The Book of J,* 62; Seidenberg, *Some Texts from the Torah,* 1. Plaut, *The Torah,* however, changes the wording to "to till it and tend it," introducing into Eden more explicitly the possibility of agriculture. Kaplan's *Living Torah* and Fox's *Schocken Bible* use "to work it and watch it," while the 1985 *Tanakh* (again, like the Plaut 1981 version) employs "to till it and tend it." Rosenberg's 1990 translation of the *Book of J* renders the passage as follows: "Yahweh lifts the man, brings him to rest in the garden of Eden, to tend it and watch." As in his Genesis 1:28 translation, Seidenberg renders the garden as female and translates the verbs as to "work/serve and watch over" her. His translation reads, "And YHVH Elohim took the human and placed him/it in 'ayden garden to work/serve her and to watch over her." Here again the female connection to the land and garden are made explicit, but "man" is instead rendered "human." This language interprets humanity as caretaker of the land. On biocentric ethics, see Paul Taylor, *Respect for Nature: A Theory of Environmental Ethics* (Princeton, N.J.: Princeton University Press, 1986). On ecocentric ethics, see Aldo Leopold, "The Land Ethic," in *A Sand County Almanac* (New York: Oxford University Press, 1949), 201–25; J.Baird Callicott, *In Defense of the Land Ethic: Essays in Environmental Philosophy* (Albany: State University of New York Press, 1989); and Holmes Rolston III, *Philosophy Gone Wild: Essays in Environmental Ethics* (Buffalo, N.Y.: Prometheus Books, 1986).
26. Oelschlaeger, *The Idea of Wilderness,* 11–12, 14, 16, 17–18, 20, 23, quotation on 11–12.
27. Ibid., 24.
28. Ibid., 25, 28.
29. Ibid., 60, 65, 67.
30. Ibid., 31, 39.
31. Ibid., 42, 47–48.
32. Carol Manahan, "The Genesis of Agriculture and the Agriculture of Genesis," unpublished manuscript. On the domestication of crops and the rise of settled agriculture, see David R.Harris and Gordon C.Hillman, ed. *Foraging and Farming: The Evolution of Plant Exploitation* (Boston:

Unwin Hyman, 1989); Daniel Zohary and Pinhas Spiegel-Roy, "Beginnings of Fruit-Growing in the Old World," *Science* 187 (1975): 319–27.

33. John Passmore, quoted in Oelschlaeger, *The Idea of Wilderness,* p. 46.
34. Mark S.Smith, *The Early History of God: Yahweh and the Other Deities in Ancient Israel* (San Francisco: Harper Collins, 1990), xix-xxvii, quotation on xxvii.
35. Henri Frankfort, H.A.Frankfort, John A.Wilson, Thorkild Jacobsen, and William A. Irwin, *Before Philosophy: The Intellectual Adventure of Ancient Man* (Baltimore: Penguin, 1949), 241–48, 253, quotations on 241–42.
36. J.Donald Hughes, *Ecology in Ancient Civilizations* (Albuquerque: University of New Mexico Press, 1975), 20–28.
37. Friedrich Engels, "Origins of the Family, Private Property, and the State" in *Selected Works* (New York: International, 1968); Johann Jacob Bachhofen, "Mother Right: An Investigation of the Religious and Juridical Character of Matriarchy in the Ancient World" (1861), in *Myth, Religion, and Mother Right: Selected Writings of J.J. Bachnofen,* trans. Ralph Manheim (Princeton, N.J.: Princeton University Press, 1967), 69–207; August Bebel, *Woman in the Past, Present, and Future* (San Francisco: G.B.Benham, 1897); Robert Briffault, *The Mothers,* (1927; abridged ed. New York: Atheneum, 1977); Jane Ellen Harrison, *Prolegomena to the Study of Greek Religion* (Cambridge: Cambridge University Press, 1922; originally published 1903); Jane Ellen Harrison, *The Religion of Ancient Greece* (London: Archibald Constable, 1905); Jane Ellen Harrison, *Myths of the Social Origins of Greek Religion* (Cambridge: Cambridge University Press, 1912); Jane Ellen Harrison, *Mythology* (1924; reprint New York: Harcourt, Brace and World/ Harbinger, 1963); Helen Diner, *Mothers and Amazons: The First Feminine History of Culture* (1929; reprint New York: Anchor Press, Doubleday, 1973); M. Esther Harding, *Women's Mysteries Ancient and Modern* (1955; reprint London: Rider, 1971); Elizabeth Gould Davis, *The First Sex* (Baltimore, Md: Penguin Books, 1972); Merlin Stone, *When God Was a Woman* (New York: Harcourt Brace Jovanovich, 1976); Adrienne Rich, *Of Woman Born* (New York: W.W.Norton, 1976); Françoise d'Eaubonne, *La feminisme ou la mort* (Paris, 1974), Marija Gimbutas, *The Goddesses and Gods of Old Europe, 6500–3500 B.C.* (Berkeley and Los Angeles: University of California Press, 1982); Pamela Berger, *The Goddess Obscured: The Transformation of the Grain Protectress from Goddess to Saint* (Boston: Beacon Press, 1985); Gerda Lerner, *The Creation of Patriarchy* (New York: Oxford, 1986); Monica Shöö and Barbara Mor, *The Great Cosmic Mother: Rediscovering the Religion of the Earth* (San Francisco: Harper Collins, 1987); Riane Eisler, *The Chalice and the Blade* (San Francisco: Harper Collins, 1988); Elinor

Gadon, *The Once and Future Goddess* (San Francisco: Harper Collins, 1989); and Rosemary Radford Ruether, *Gaia and God: An Ecofeminist Theology of Earth Healing* (San Francisco: Harper Collins, 1992).

38. Davis, *The First Sex,* 16–17.
39. Stone, *When God Was a Woman,* xii-xiii: "Archaeological, mythological and historical evidence all reveal that the female religion, far from naturally fading away, was the victim of centuries of continual persecution and suppression by the advocates of the newer religions which held male deities as supreme. And from these new religions came the creation myth of Adam and Eve and the tale of the loss of Paradise."
40. See Gimbutas, *The Goddesses and Gods of Old Europe.*
41. Rich, *Of Woman Born,* 56: "A prehistoric civilization [was] centered around the female, both as mother and head of family, and as deity—the Great Goddess who appears throughout early mythology, as Tiamat, Rhea, Isis, Ishtar, Astarte, Cybele, Demeter, Diana of Ephesus, and by many other names: the eternal giver of life and embodiment of the natural order, including death."
42. Lerner, *The Creation of Patriarchy,* 153: "The young god who slays Tiamat in the epic is Marduk, the god worshipped in the city of Babylon. Marduk first emerges during the time of Hammurabi of Babylon, who has made his city-state dominant in the Mesopotamian region."
43. Stone, *When God Was a Woman,* 10–11, 139–44.
44. Lerner, *Creation of Patriarchy,* 154: "The changing position of the Mother-Goddess, her dethroning, takes place in many cultures and at different times, but usually it is associated with the same historical processes…. In Egypt, where the male God early predominates, we can also find traces of a still earlier predominance of the Goddess. Isis…. [was] 'the prototype of the life-giving mother and faithful wife.'"
45. Stone, *When God was a Woman,* 51–53; Shöö and Mor, *The Great Cosmic Mother,* 235–37, According to Shöö and Mor, "The Olympian god…is not born from woman, or earth, or matter, but from his own absolute will. He represents a static perfection, in human form, incapable of transformation or ecstatic change; as a God, he is an intellectual concept" (235).
46. Davis, *The First Sex,* 142–44, quotation on 144.
47. Stone, *When God was a Woman,* 198–223, quotation on 223.
48. Eisler, *The Chalice and the Blade,* xvii, 105, 185–203; Ruether, *Gaia and God,* 2–3; and Rosemary Radford Ruether, "Gender and the Problem of Prehistory," unpublished manuscript, 35.

CHAPTER 3

1. Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies* (New York: W.W. Norton, 1997), 87, 167, 135–38.

2. Hesiod, "Works and Days," in *Theogeny and Works and Days* (New York: Oxford University Press, 1988), 40.
3. J.Donald Hughes, *Ecology in Ancient Civilizations* (Albuquerque: University of New Mexico Press, 1975), 68–80; Clarence Glacken, *Traces on the Rhodian Shore: Nature and Culture in Western Thought From Ancient Times to the End of the Eighteenth Century* (Berkeley and Los Angeles: University of California Press, 1967), 1–18.
4. Plato, "Critias," in *The Dialogues of Plato,* (1892) trans. B.Jowett (New York: Random House, 1937), 2:73–75, quotations on 75.
5. Publius Ovid, *Metamorphoses,* (C.E. 7), trans. Rolfe Humphries (Bloomington: Indiana University Press), 6, lines 100–11.
6. On the meanings of nature and nation and the following interpretation of Virgil, see Kenneth Olwig, *Nature's Ideological Landscape* (London: Allen and Unwin, 1984), 3–9.
7. Ibid., 6; Virgil, *Georgics* 1, lines 151–52, quoted in Olwig, *Nature's Ideological Landscape,* 6.
8. Olwig, *Natures Ideological Landscape,* 3–9; Virgil, *Georgics* 2, lines 106–7, and *Eclogues* 4:4–34.
9. Lucretius, *Of the Nature of Things,* trans. William Ellery Leonard (New York: E.P. Dutton, 1950), book 5, lines 922–1008, 1135–85.
10. Ibid., book 6, lines 1136–1284; book 5, lines 811–70.
11. Dante Alighieri, *The Divine Comedy,* in *The Portable Dante,* ed. Mark Musa (New York: Penguin, 1984).
12. Robert Pogue Harrison, *Forests: The Shadow of Civilization* (Chicago: University of Chicago Press, 1992), 86.
13. Ibid., 86, 87.
14. Dante, "Inferno," in *The Portable Dante,* canto 1.
15. Ibid., canto 1, lines 2, 5, 7, 29, 64, 132; canto 2, line 63; canto 3, lines 28, 29, 118, 66, 69, 112–13, 115–16, 118.
16. Dante, "Purgatory," in *The Portable Dante,* canto 28, lines 2, 28, 79, 121–22.
17. Ibid., canto 29, lines 24–27; Canto 32, lines 38–39.
18. Ibid., canto 33, lines 143–45.
19. Dante, "Paradise," in *The Portable Dante,* canto 30, lines 62–63, 65–67, 109–10, 117, 122–23; Harrison, *Forests,* 87.
20. Dante, "Paradise," in *The Portable Dante,* canto 23, lines 71–72; canto 32, lines 121–23; "Purgatory," in *The Portable Dante,* canto 29, line 24; canto 33, line 32.
21. On Eve, see Dante, "Purgatory," in *The Portable Dante,* canto 33, line 53. On Beatrice and the science of light, see "Paradise," John Prest, *The Garden of Eden: The Botanic Garden and the Re-Creation of Paradise* (New Haven, Conn.: Yale University Press, 1981), 21–22.

22. Avril Henry, ed., *The Mirour of Mans Saluacioun: A Middle English Translation of Speculum Humanae Salvationis* (Philadelphia: University of Pennsylvania Press, 1987), 43.
23. Ibid., 45, 51, 53.
24. Pamela Berger, *The Goddess Obscured: The Transformation of the Grain Protectress from Goddess to Saint* (Boston: Beacon Press, 1985).
25. Prest, *Garden of Eden,* 21–22.
26. St. Genevieve, patron saint of Paris, was declared a saint when she was seven years old by St. Germain of Auxerre. She is venerated for saving Paris from the ravages of Attila the Hun by encouraging the people in fasting and prayer and assuring them of the protection of God. In apparent response, the Huns turned aside. She lived a life dedicated to charity, austerity, and prayer until her death in 512 C.E.
27. Prest, *Garden of Eden,* 21; Geoffrey Chaucer, "The Merchant's Tale," in *Works,* ed. F.N. Robinson (Boston: Houghton Mifflin, 1957), lines 2044–46, 2143–46.
28. David F.Noble, *The Religion of Technology: The Divinity of Man and the Spirit of Invention* (New York: Alfred A.Knopf, 1997), 22–23; Marjorie Reeves, *Joachim of Fiore and the Prophetic Future* (London: SPCK, 1976), 1–28.
29. Sheler, Jeffrey L. "The Christmas Covenant," *U.S. News and World Report,* December 19, 1994:62–71.
30. Noble, *Religion of Technology,* 16–17.
31. George Ovitt Jr., *The Restoration of Perfection: Labor and Technology in Medieval Culture* (New Brunswick, N.J.: Rutgers University Press, 1987), 127; Noble, *Religion of Technology,* 19–20.
32. Noble, *Religion of Technology,* 26–27; Charles Webster, *The Great Instauration: Science, Medicine and Reform, 1626–1660* (London: Duckworth, 1975), esp. 1–12, 324–27.
33. Christopher Columbus, letter, October 18, 1498, in Thomas and Carol Christensen, ed. *The Discovery of America and Other Myths* (San Franciso: Chronicle Books, 1992), 7–8.
34. John Prest, *The Garden of Eden: The Botanic Garden and the Re-Creation of Paradise* (New Haven, Conn.: Yale University Press, 1981), 32.
35. Prest, *Garden of Eden,* 35, 37. During the Renaissance, artists illustrated the Garden of Eden story through woodcuts and paintings. The Creation chapter, with Adam and Eve's admission to the Garden of Eden, drew the greatest attention. Perhaps the most famous is Michelangelo's *Creation of Adam,* in which God transmits the spark of life to Adam's outstretched hand; less well-known is his "Creation of Eve" in which God draws Eve out of a sleeping Adam's rib. The woodcut from a 1503 edition of Ludolphus's *Mirror of Mans Salvation* shows God welcoming Adam and Eve lockstep through a portal into an enclosed circular garden containing

two trees—the tree of Life and the tree of the knowledge of good and evil —and from which four rivers flowed (see fig. 2.1 in chapter 2). G.B.Andreini, in his *L'Adamo, sacra rapresentatione* (1617), depicted Adam naming the animals outside the entrance to the garden. A second illustration from the same work showed God creating Adam outside the garden with the animals waiting to be named followed by Eve's creation from Adam's rib inside the garden walls. The garden itself was a geometrically laid park, with the tree of the knowledge of good and evil at its center; see Prest, *Garden of Eden,* 10, 12, 13. The Temptation, Fall, and Expulsion chapters of the story likewise received great attention. J.P.Bergomensis in 1510 showed two successive scenes: the left side depicted Eve taking the apple from the serpent, while Adam stood innocently by; the right side showed the couple in hasty retreat from an angel hovering above them, waving a sword. J.J. Pré's illustration of 1488 showed the serpent tempting Eve in the background, while in the foreground Adam and Eve, covering themselves with fig leaves, are expelled through the garden gate, no longer in lockstep (see fig. 2.2, in chapter 2). Beside them a cherubim brandishes a flaming sword to guard the Tree of Life. See also Prest, *Garden of Eden,* 22, 15.

Perhaps the most well-known depictions of the Temptation are the woodcuts and paintings of Albrecht Dürer and Lucas Cranach. Dürer's *The Fall of Man* (1504) juxtaposes Adam and Eve in a dark forest surrounded by domesticated animals—goats, cattle, cats, rabbits, and mice—with wilderness images of a mountain goat perched precariously on a rocky ledge behind Eve, while a jungle parrot sits on a branch held by Adam. The snake transfers the apple from its mouth to Eve's hand, while Adam extends his arm in anticipation. Cranach's *Adam and Eve* (1526) (fig. 3.3 in chapter 3) shows Eve offering the apple to Adam after having been enticed by the snake coiled around the tree of the knowledge of good and evil. Here Eve is portrayed as the bold instigator of the experiment, while Adam scratches his head quizzically—a puzzled, uncertain participant in the forbidden venture. (For Cranach, see Max J.Friedländer and Jakob Rosenberg, *The Paintings of Lucas Cranach* (London: Sotheby Parke Bernet, 1978), illustration 191. Animals, in medieval representations of the Garden of Eden, were gentle and tame. They formed a "peaceable kingdom" where the "lion would lie down with the stag," as in Jan Brueghel the elder's (1568–1625) *Garden of Eden.* Here "wild" animals behaved like the domesticated sheep and gentle doves of the pastoral setting; all of nature lived in harmony. (See Prest, *Garden of Eden,* 4–5, 21–22).

36. Ibid., 21–22. The discovery of new plants and animals not mentioned in the Bible presented dilemmas. Potatoes, tomatoes, chocolate, pineapples, tobacco, vanilla, and morning glories did not have biblical names. Nowhere on the Ark were found llamas, alpacas, iguanas, turkeys,

bisons, or guinea pigs. It seemed that God had set aside certain parts of his creation to be rediscovered in other parts of the world at a future time. Notes Prest, "If God had revealed an aspect of himself in each plant and animal that he created, the creatures could not be wholly depraved, and with the discovery of America the idea grew up that what had happened at the Fall was not so much that nature had been poisoned, but that it had been scattered. . .. In the Garden of Eden, Adam and Eve had been introduced to the completed picture. When they sinned, God had put some of the pieces away in a cupboard—an American cupboard—to be released when mankind improved, or He saw fit"; Prest, *Garden of Eden,* 21–22.

37. Zygmunt Bauman, "Gamekeepers Turned Gardeners," in *Legislators and Interpreters: On Modernity, Post-modernity, and Intellectuals* (Oxford: Polity Press, 1987), 51–67, esp. 51–53.
38. Ibid., 51–53; Dianne Harris, "Lombardia Illuminata: The Formation of an Enlightenment Landscape in Eighteenth Century Lombardy" (Ph.D. diss., University of California-Berkeley, 1996); Prest, *Garden of Eden,* 1–3.
39. Bauman, "Gamekeepers Turned Gardeners," 52–53.
40. Prest, *Garden of Eden,* 33, 42; quotation on 39.
41. Eustace M.W.Tillyard, *The Elizabethan World Picture* (New York: Vintage, 1959, 42; see also Charles Whitney, *Francis Bacon and Modernity* (New Haven, Conn.: Yale University Press, 1986), 123.

CHAPTER 4

1. Carolyn Merchant, *The Death of Nature: Women, Ecology and the Scientific Revolution* (San Francisco: Harper Collins, 1980), 42–68; H.C.Darby, "The Clearing of the Woodland in Europe," in *Man's Role in Changing the Face of the Earth,* ed. William L.Thomas Jr., 2 vols. (Chicago: University of Chicago Press, 1956), 1:183–216; Gottfried Pfeifer, "The Quality of Peasant Living in Central Europe," in Thomas, ed., *Man's Role in Changing the Face of the Earth,* 1:240–77; Michael Williams, "Forests," in B.L.Turner, II, William C.Clark, Robert W.Kates, John F.Richards, Jessica T.Matthews, and William B.Meyer, eds., *The Earth As Transformed by Human Action: Global and Regional Changes in the Biosphere over the Past Three Hundred Years* (New York: Cambridge University Press, 1990), 179–201, esp. 180–81; Clive Ponting, *A Green History of the World: The Environment and the Collapse of Great Civilizations* (New York: St. Martin's Press, 1991), 96–106.
2. Ponting, *A Green History of the World,* 97; William H.Te Brake, "Air Pollution and Fuel Crises in Preindustrial London," *Technology and Culture* 16 (1975): 337–59.

3. John U. Nef, *The Rise of the British Coal Industry,* 2 vols. (Hamden, Conn.: Archon, 1966), 1:156–64; Eugene F.Rice, *The Foundations of Early Modern Europe, 1450–1559* (New York: W.W.Norton, 1970); John F.Richards, "Land Transformation," in Turner, et al. eds., *The Earth as Transformed by Human Action,* 163–78, esp. 164, table 10–1, 164; Williams, "Forests," 180–81, esp. table 11–1, 180; Ponting, *A Green History of the World,* 98.
4. On the origin story of capitalism, see Marshall Sahlins, *Culture and Practical Reason* (Chicago: University of Chicago Press, 1976), 53: "The development from a Hobbesian state of nature is the origin myth of western capitalism."
5. *Oxford English Dictionary,* 2nd ed. (Oxford, England: Clarendon Press, 1989), s.v. "wild"; John Stilgoe, *Common Landscape of America, 1580–1845* (New Haven, Conn.: Yale University Press, 1982), 7–12.
6. *Oxford English Dictionary,* s.v. "wild"; vol. 20, 330–35; Stilgoe, *Common Landscape of America,* 7–12.
7. Genesis 2:17–19; Numbers (Annals of the Wilderness); Isaiah 35:1; Roderick Nash, *Wilderness and the American Mind* (New Haven, Conn.: Yale University Press, 1977), 13–17.
8. Merchant, *Death of Nature,* 131.
9. *Oxford English Dictionary,* s.v. "civic," "civilization."
10. Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England* (Chapel Hill: University of North Carolina Press, 1989), 39–40.
11. Merchant, *Ecological Revolutions,* 41; Merchant, *Death of Nature,* 131.
12. See Richard Ashcraft, "Leviathan Triumphant: Thomas Hobbes and the Politics of Wild Men," in *The Wild Man Within* (Pittsburgh: University of Pittsburgh Press, 1972), 147, 151. Also Joseph de Acosta, *The Natural and Moral History of the Indies,* (English translation 1604 by Edward Grimston), ed. Clements R.Markham, 2 vols. (London: Hakluyt Society, 1880), 1:70, and 2:410, 426–27, 450; Garcilaso de la Vega, *Royal Commentaries of the Incas,* trans. Harold V.Livermore, 2 vols. (Austin: University of Texas Press, 1869), 1:42.
13. Ashcraft, "Leviathan Triumphant," 151, 152. On the Virginia massacre see Alden T. Vaughan, "English Policy and the Massacre of 1622," *William and Mary Quarterly* 35 (1978): 57–84.
14. See also John Donne, "An Anatomie of the World: The First Anniversary," in *The Poems of John Donne,* ed. Herbert Grierson (London: Oxford University Press, 1957), 208–26. Donne's anniversary poems, written in 1611–12 to commemorate the death of the young Elizabeth Drury, cast the earth as dead and dying, with sickness permeating the entire cosmos. With Drury's death, heaven and earth had decayed, the human lifespan had been shortened, "man's" stature truncated, and its mental powers weakened. Decline in human vigor extended to all of nature and even the

heavens themselves. The earth had become a cripple, a wan ghost, an ugly monster, and a dry cinder. At the end of each section, Donne drove home the point with the dirge-like refrain: "Shee is dead, she's dead."

15. Richard Foster Jones, *Ancients and Moderns: A Study of the Rise of the Scientific Movement in Seventeenth Century England* (St. Louis: Washington University Studies, 1961), 22–29; Victor Harris, *All Coherence Gone* (Chicago: University of Chicago Press, 1949), 1–46. For Goodman, the barrenness of nature was a direct consequence of humanity's original sin. The Fall had introduced thorns, briars, and thistles into the environment. The earth had lapsed from producing noble lions, tigers, and unicorns into procreating lowly worms and gnats. The weather was no longer propitious for growing crops, droughts marred spring planting, and fall freezes destroyed harvests. Mountains had eroded, rivers were clogged with muck, and seas inundated the land. The heavens too were mutable and corrupt. Spots blemished the sun, the years were getting shorter, comets streaked across the fixed stars, and the moon's surface was pocked with craters.
16. Henry Vaughan, quoted in Marjorie Hope Nicolson, *Mountain Gloom and Mountain Glory: The Development of the Aesthetics of the Infinite* (1959; reprint Seattle: University of Washington Press, 1997), 83. See Henry Vaughan, "Corruption," in *The Complete Poems,* ed. Alan Rudrum (New Haven, Conn.: Yale University Press, 1976), 197.
17. John Milton, quoted in Nicolson, *Mountain Gloom and Mountain Glory,* 86–87. See also John Milton, *Paradise Lost: A Poem in Ten Books* (London: Peter Parker, 1668), book 9, lines 782, 997.
18. Thomas Burnet, *The Sacred Theory of the Earth,* intro. by Basil Willey (Carbondale: Southern Illinois University Press, 1965), 53, 64, 133–34: "In this smooth earth were the first Scenes of the World, and the first Generations of Mankind; it had the Beauty of Youth and blooming Nature, fresh and fruitful, and not a wrinkle, scar, or fracture in all its body; no Rocks nor Mountains….the Air was calm and serene…. 'Twas suited to a golden Age, and to the first innocency of Nature." The entire orginal earth was paradise, "that seat of pleasure which our first Parents lost, and which all their posterity have much ado to find again." Lost in the Fall was the perpetual spring, the longevity of animals, and the "great fertility of the soil." See also Nicolson, *Mountain Gloom and Mountain Glory,* 198–200.
19. Burnet, *The Sacred Theory of the Earth,* 84; Burnet writes that had not Noah built his ark, all mankind would have disappeared and the earth would have been "nothing but a Desert, a great ruine, a dead heap of Rubbish, from the Deluge to the Conflagration." The earth that remained after the waters receded was the earth of the present era and state of nature. See also Nicolson, *Mountain Gloom and Mountain Glory,* 198–200.

20. Burnet, *Sacred Theory of the Earth,* 24.
21. Francis Bacon, "Novum Organum," in *Works,* ed. James Spedding, Robert Leslie Ellis, and Douglas Devon Heath, 14 vols. (London: Longmans Green, 1870), 114–15, 247–48, emphasis added. See also Bacon, "Valerius Terminus," in *Works,* 3:217, 219. On domination, see William Leiss, *The Domination of Nature* (New York: George Braziller, 1972), 48–52; Charles Whitney, *Francis Bacon and Modernity* (New Haven, Conn.: Yale University Press, 1986), 123.
22. Bacon, "Preparative Towards a Natural and Experimental History," in *Works,* 4:263, emphasis added.
23. Bacon, "The New Atlantis," in *Works,* 3:155–65; Merchant, *Death of Nature,* 180–86.
24. René Descartes, "Discourse on Method (1637)," in *Philosophical Works of Descartes,* ed. E.S.Haldane and G.R.T.Ross, eds., 2 vols. (New York: Dover, 1955), 1:119.
25. Isaac Newton, *Philosophiae Naturalis Principia Mathematica* (1687); trans. by A.Motte as *Mathematical Principles of Natural Philosophy,* (1729), rev. Florian Cajori (Berkeley and Los Angeles: University of California Press, 1934); David Kubrin, "How Sir Isaac Newton Helped Restore Law n' Order to the West," *Liberation,* 16, no. 10 (Mar. 1972): 32–41; Christopher Hill, *The World Turned Upside Down: Radical Ideas during the English Revolution* (New York: Viking Press, 1972).
26. Merchant, *Death of Nature,* 229–30.
27. On premodern property hierarchies in society, see Carol M.Rose, *Property and Persuasion: Essays on the History, Theory, and Rhetoric of Ownership* (Boulder, Colo.: Westview Press, 1994) , 58–59.
28. The state of nature as used in the seventeenth century referred to the condition of humanity before the foundation of organized society, a uncultivated or undomesticated condition, or the moral state natural to man as opposed to the state of grace. See *Oxford English Dictionary,* s.v. "nature," no. 14, "state of nature."
29. Ronald Meek, *Social Science and the Ignoble Savage* (Cambridge: Cambridge University Press, 1976), 14–19, quotation from Grotius on 15; Thomas Hobbes, *Leviathan* (1651), in *English Works,* vol. 3 (Aalen, Germany: Scientia, 1966), book 1, ch. 13.
30. Meek, *Social Science and the Ignoble Savage,* quotations from Pufendorf on 18, 19.
31. John Locke, "The First Treatise," in *Two Treatises of Government* (1689), ed. Peter Laslett (Cambridge: Cambridge University Press, 1967; John Locke, *Second Treatise of Government* (1689), ed. Richard H.Cox (Arlington Heights, 111.: Harlan Davidson, 1982); Robert Filmer, *Patriarcha: or the Natural Power of Kings* (London: 1680).
32. On Locke's place in the debate between ancients and moderns, see Richard H.Cox, introduction to Locke, *Second Treatise,* 7; see also xxv—

xxvi. Contradictory implications existed depending on how people read Locke's text Cox points out (xxv-xxvi). Was the state of nature for Locke bad, as Viscount Bolingbroke argued in 1704, or good, as historian Basil Willey later claimed. For Bolingbroke, Locke's "state of freedom… would have been a state of war and violence, of mutual…oppression,… [such as] Hobbes imagined to have been the state of nature." Henry St. John, Viscount, Bolingbroke, *Political Writings,* ed., Isaac Kramnick (New York: Meredith Corporation, 1970), 12–13. But Willey concluded that "the state of nature is so far from resembling the ill condition described by Hobbes, that it approximates rather to the Eden of the religious tradition, or the golden age of the poets…." Basil Willey, *The Seventeenth Century Background: Studies on the Thought of the Age in Relation to Poetry and Religion* (New York: Columbia University Press, 1952), 266–67. There were two different stories, two different strategies for action, and two different outcomes. If Bolingbroke was right, there was no pathway to improvement. If Willey was right, no reason existed to even attempt improvement. But the two views can be reconciled if they are both seen through the lens of reinventing Eden.

33. Locke, "First Treatise," 178, sec. 27; quotation on 179, sec. 28, lines 12–13, 16. See also Locke, "First Treatise," 176, sec. 25.
34. Locke, "First Treatise," quotations on 177, sec. 27, lines 3–4 and 223, sec. 86, lines 26–28. See also Locke, "First Treatise," 227, sec. 92; 230, sec. 97; 177, sec. 27; 183, sec. 34.
35. On Locke's *Second Treatise* as a property narrative, see Rose, *Property and Persuasion,* 26, 38, 41, which summarizes Locke's narrative as follows: "Although the parts are somewhat scattered, the *Treatise* clearly unfolds a story line, beginning in a plenteous state of nature, carrying through the growing individual appropriation of goods, then proceeding to the development of a trading money economy, and culminating in the creation of government to safeguard property" (26). Further, "[Locke] starts off with a tale of people in a state of nature, acquiring natural products like acorns and apples through the very labor of gathering them; then realizing that wealth could be stored through the collection of durables (like nuts and little pieces of gold); and finally, growing nervous at the 'very unsafe, very unsecure' enjoyment of property in the state of nature and joining with others to establish the civil society that will protect everyone's hard-earned property." (38) My account of the underlying structure of Locke's narrative is inspired by Rose's idea, but elaborates the details differently.
36. Locke, *Second Treatise,* quotation on 33, sec. 56; see also 47, secs. 77–78. Locke, "First Treatise," 179–80, secs. 29, 30. God did not give "any Authority to Adam over Eve, or to Men over their Wives, but only [foretold] what should be the Woman's Lot." (Locke, "First Treatise," 192, sec. 47). Further, "If it be said that *Eve* was subjected to *Adam,* it

seems she was not so subjected to him, as to hinder her *Dominion* over the Creatures or *Property* in them…." ("First Treatise," 179, sec. 29). While Filmer had held that the man was "the nobler and Principal Agent in generation," Locke stated that the father and mother had joint dominion over the child and that the mother had an equal if not greater share in generation. He thus took a step away from patriarchal authority and toward the possibility of equality for women. ("First Treatise," 192, sec. 47; 198, sec. 55.)

37. Locke, *Second Treatise,* 35, sec. 59.
38. Locke, *Second Treatise,* 5–9; "For 'tis not every compact that puts an end to the state of nature between men, but only this one of agreeing together mutually to enter into one community, and make one body politic; other promises, and compacts, men may make one with another, and yet still be in the state of nature" (9). "To avoid this state of war…is one great reason of men's putting themselves into society, and quitting the state of nature" (Locke, *Second Treatise,* 13).
39. On the joining of dominion with appropriation, see Locke, *Second Treatise,* 22, sec. 35. In refuting Filmer's *Patriarcha,* which had argued for the divine right of kings, Locke denied that Adam had received any inherited right to rule over the world that could arguably be traced back to Adam. It was absurd, Locke thought, that Adam would be punished by being thrown out of Eden to till the ground and at the same time be given a throne and absolute rule over the world forever after (Locke, "First Treatise," 190, sec. 44). If Filmer was correct, Locke asserted, it would mean that all human beings were slaves to a single monarch and there could be no freedom for any person on earth. "Adam's private dominion and paternal jurisdiction" did not survive the Fall (Locke, *Second Treatise,* 1).
40. Locke, *Second Treatise,* 18, secs. 19; 26–27, sec. 28; 20, sec. 30.
41. Ibid., quotations on 21, sec. 32; 22, sec. 35.
42. Ibid., 28, sec. 4; 29, sec. 46; 31, sec. 50.
43. Ibid., 23, sec. 36.
44. Ibid., 53, sec. 89; 130–31, secs. 211–12; 58, sec. 95. "Those who are united into one body, and have a common established law and judicature to appeal to, with authority to decide controversies between them, and punish offenders, *are in civil society* one with another; but those who have no such common appeal, I mean on earth, are still in the state of nature, each being, where there is no other, judge for himself and executioner; which is, as I have before showed it, the perfect *state of nature"* (*Second Treatise,* 52, sec. 87). This *"puts men* out of a state of nature *into* that of a *commonwealth"* (*Second Treatise,* 53, sec. 89). "For the *end of civil sociefy,* being to avoid and remedy those inconveniences of the state of nature, which necessarily follow from every man's being judge in his own case…" (*Second Treatise,* 53, sec. 90). *"No man in civil society can*

be exempted from the laws of it. For if any man may do, what he thinks fit, and there be no appeal on earth, for redress or security against any harm he shall do; I ask, whether he be not perfectly still in the state of nature, and so can be *no part or member of that civil society"* (*Second Treatise,* 57, sec. 94). "The *beginning of politic society* depends upon the consent of the individuals to join into and make one society" (*Second Treatise,* 64, sec. 106).

45. Locke, *Second Treatise,* 75, sec. 123; 76–77, secs. 128–29; 77, sec. 131.
46. On the process by which the dominant storyteller makes the new position seem natural, see Rose, *Property and Persuasion,* 39.
47. For Smith's history of civil society, see Andrew Skinner's introduction to Adam Smith, *The Wealth of Nations* (1776), ed. Andrew Skinner (New York: Penguin, 1986), 11–97; quotation from Adam Smith, *Lectures on Jurisprudence,* ed. Edwin Cannan (1896), in Skinner, introduction to Smith, *Wealth of Nations,* 31. Meek, *Social Science and the Ignoble Savage,* 99–130.
48. Meek, *Social Science and the Ignoble Savage,* 16, 127, 99–130. For Smith's quotation on Rousseau's *Discourse on the Origins of Inequality,* reviewed by Smith in 1855, see Meek, 116.
49. On overcoming faulty human nature through morality, see, Adam Smith, *The Theory of Moral Sentiments* (1790), ed. D.D.Raphael and A.L.Macfie, 6th ed. (Oxford: Clarendon Press, 1976), 86. For Smith, the positive side of human nature is a "moral sentiment" to act benevolently (conscience). Additionally, the state that restrains people from harming others and their property (justice) acts as a social check on runaway self-interest. In the moral as well as the economic sphere, all this occurs without knowledge of an overall plan on the part of the individual actors in accordance with an "invisible hand." See Smith, *Theory of Moral Sentiments,* 184–85: "They [the rich] are led by an invisible hand to make nearly the same distribution of the necessaries of life, which would have been made, had the earth been divided into equal portions among all its inhabitants, and thus without intending it, without knowing it, advance the interest of the society and afford means to the multiplication of the species. When Providence divided the earth among a few lordly masters, it neither forgot nor abandoned those who seemed to have been left out in the partition. These last too enjoy their share of all that it produces."
50. Ibid., quotations on 168.
51. Kathryn Sutherland, "Adam Smith's Master Narrative: Women and the *Wealth of Nations"* in *Adam Smith's Wealth of Nations: New Interdisciplinary Essays,* ed. Stephen Copley and Kathryn Sutherland (Manchester: Manchester University Press, 1995), 96–121, quotations on 112, 118.
52. See Thomas H.Birch, "The Incarceration of Wildness: Wilderness Areas As Prisons," in *The Great New Wilderness Debate,* ed. J.Baird Callicott

and Michael P.Nelson (Athens, Ga.: University of Georgia Press, 1998), pp. 443–70.

53. David Lowenthal, "Awareness of Human Impacts: Changing Attitudes and Emphases," in Turner, et al., eds., *The Earth As Transformed by Human Action,* 121–35; John Evelyn, *Fumifugium* (1661; reprint Oxford: Old Ashmolean Reprints, 1930).
54. John Evelyn, *Silva, Or a Discourse on Forest Trees* (York, England, 1776 [1662]); John Crombie Brown, ed. and trans., *The French Forest Ordinance of 1669* (Edinburgh: Oliver and Boyd, 1883); Clarence Glacken, *Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Century* (Berkeley and Los Angeles: University of California Press, 1967), 484–91; Merchant, *Death of Nature,* 237–240.
55. John Ray, *The Wisdom of God Manifested in the Works of the Creation* (1691), 10th ed. (London: Innys and Manby, 1935) 206, 215; Merchant, *Death of Nature,* 246–252.
56. William Derham, *Physico-Theology: or A Demonstration of the Being and Attributes of God, from His Works of Creation* (1713), 6th ed. (London: Innys, 1728;), 257, 260, 280.
57. Nicolson, *Mountain Gloom and Mountain Glory,* 285, 286, 299.
58. Ibid., 279, 293, 300–301.
59. Edmund Burke, *A Philosophical Enquiry into the Origins of Our Ideas of the Sublime and Beautiful (1757),* 2d ed. (London: R. and J.Dodsley, 1759), part 2, secs. 1, 2; part 3, sec. 26.
60. Immanuel Kant, *Observations on the Feeling of the Beautiful and Sublime* (1761), trans. John T.Goldthwait (Berkeley and Los Angeles: University of California Press, 1960), sec. 2.

CHAPTER 5

1. Hugh Talmage Lefler and Albert Ray Newsome, *North Carolina: The History of a Southern State* (Chapel Hill: University of North Carolina Press, 1954), 4, 5; Thomas Morton, *New English Canaan,* in *Tracts and Other Papers Relating Principally to the Origin, Settlement, and Progress of the Colonies in North America, from the Discovery of the Country to the Year 1776, 2* vols., ed. Peter Force (Washington, D.C.: Peter Force, 1836–38), 2:36–37.
2. Thomas Harriot, *A Briefe and True Report of the New Found Land of Virginia, The Complete 1590 Theodor de Bry Edition,* with a new introduction by Paul Hulton (New York: Dover, 1972), 41.
3. Mark Stoll, *Protestantism, Capitalism, and Nature in America* (Albuquerque: University of New Mexico Press, 1997), 56.
4. World Resources Institute, *World Resources, 1998–99* (New York: Oxford University Press, 1998), 293–95; Michael Williams, "Forests," in

B.L.Turner II, William C.Clark, Robert W. Kates, John F.Richards, Jessica T.Matthews, and William B.Meyer, eds., *The Earth as Transformed by Human Action: Global and Regional Changes in the Biosphere over the Past Three Hundred Years* (New York: Cambridge University Press, 1980), 179–201; Charles F.Carroll, *The Timber Economy of Puritan New England* (Providence, R.I.: Brown University Press, 1973), 33–37, 123–27.

5. John Winthrop, *Winthrop's Conclusions for the Plantation in New England (1629), Old South Leaflets,* vol. 50 (Boston: Directors of the Old South Work, 1897), 4–5.
6. William Bradford, *Of Plimoth Plantation* (Boston: Wright and Potter, 1901), 95.
7. Vladimir Propp, "Morphology of the Folktale," *International Journal of American Linguistics* 24, no. 4 (1958):1–114, esp. 46–48; Roland Barthes, "The Struggle with the Angel," in Stephen Heath trans. *Image, Music, Text* (New York: Noonday Press, 1977), 139–41.
8. John Cotton, quoted in Peter N.Carroll, *Puritanism and the Wilderness, 1629–1700* (New York: Columbia University Press, 1969), 13–14.
9. Bradford, *Of Plimoth Plantation,* 95.
10. Morton, *New English Canaan, 2:*1–152.
11. Thomas Hooker, *Application of Redemption—The Ninth and Tenth Books,* 2 d ed. (Cornhil, England; Peter Cole, 1659), book 9; Roger Williams, quoted in Peter Fritzell, "The Wilderness and the Garden: Metaphors for the American Landscape," *Forest History* 12, no. 1 (1968): 16–23, on 22. Peter Bulkeley, *The Gospel Covenant: Or the Covenant of Grace Opened* (London: Benjamin Allen, 1646), 143. In the eighteenth century, Boston pastor Charles Morton followed both the Genesis origin story and the Baconian ideal when he wrote in 1728 that because of the sin of the first parents, agriculture and husbandry must be used to combat weeds and soil sterility through fencing, tilling, manuring, and draining the land. Almanac maker Nathaniel Ames, in 1754, informed his readers that the divine artificer initially had made the body of man "a machine capable of endless duration," but that after Eve's ingestion of the forbidden apple, the living principle within had fallen into disharmony with the body, disrupting the smooth functioning of its parts. See Charles Morton, *Compendium Physicae, from the 1697 Manuscript Copy,* vol. 33 (Boston: Colonial Society of Massachusetts Publications, 1940), xi, xxix, xxxi; Nathaniel Ames, *Astronomical Diary or Almanac* (Boston: J.Draper, 1758), endpapers.
12. Robert Beverley, *The History and Present State of Virginia* (London: R.Parker, 1705), 246–48.
13. Charles Sellers, *The Market Revolution: Jacksonian America, 1815–1846* (New York: Oxford University Press, 1991), 1–40, 57–59, 72–76.

14. Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England* (Chapel Hill: University of North Carolina Press, 1989), 149–97.
15. Sellers, *Market Revolution,* 35–36, 114–17.
16. David W.Noble, *The Eternal Adam and the New World Garden: The Central Myth in the American Novel since 1830* (New York: George Braziller, 1968), 3–24.
17. Ibid., 4.
18. George Bancroft, *History of the United States* (Boston: Little, Brown, 1840), cited in Noble, *The Eternal Adam,* 7.
19. Annette Kolodny, *The Lay of the Land: Metaphor As Experience and History in American Life and Letters* (Chapel Hill: University of North Carolina Press, 1975), 78, 79.
20. George Rogers Taylor, *The Transportation Revolution, 1815–1860* (New York: Reinhart, 1951); Alfred D.Chandler, "Anthracite Coal and the Beginnings of the Industrial Revolution in the United States," *Business History Review* 46, no. 2 (1972):141–81.
21. Calvin Colton, "Labor and Capital," in *The Junius Tracts* (New York: Greeley and McElrath, 1844), no. 7.
22. Ralph Waldo Emerson, "The Young American," *The Dial* 4, (1844):484–507; quotations on 489, 491.
23. Leo Marx, *The Machine in the Garden: Technology and the Pastoral Ideal in America* (New York: Oxford University Press, 1964).
24. John James Audubon, *Delineations of American Scenery and Character (1808–1834)* (New York: G.A.Baker, 1926), 4, cited in Kolodny, *The Lay of the Land,* 76.
25. Noble, *The Eternal Adam,* 16–17; Kolodny, *The Lay of the Land,* 92,102; James Fenimore Cooper, *The Pioneers* (1823), vol. 4 of *The Works of James Fenimore Cooper* (London: George Routledge and Sons, 1895), 247–56, quotation on 256.
26. Matthew Baigell, *Thomas Cole* (New York: Watson Guptill, 1981), plates 7, 16; William Cronon, "Telling Tales on Canvas," in *Discovered Lands, Invented Pasts,* Jules David Prown, Nancy K.Anderson, William Cronon, Brian W.Dippie, Martha Sandweiss, Susan Prendergast Schoelwer, and Howard R.Lamar (New Haven, Conn.: Yale University Press, 1992), 37–87.
27. Henry Adams, "The American Land Inspired Cole's Prescient Visions," *Smithsonian* 25, no. 2 (1994):99–107; Baigell, *Thomas Cole,* plates 10, 15.
28. Herman Melville, "The Encantadas, or 'Enchanted Isles,'" in *Herman Melville,* ed. R.W.B.Lewis (New York: 1962), 123, 127, 130–4, cited in Donald Worster, *Nature's Economy: A History of Ecological Ideas,* 2d ed. (New York: Cambridge University Press, 1995), 121; Noble, *The Eternal Adam,* 35, 46–7, and quotation from Melville on 42.

29. Thomas Huxley, "Prolegomena (1894)," in *Evolution and Ethics* (London: 1947), 38–44, cited in Worster, *Nature's Economy,* 179. Worster notes that the Victorians "were at least as intent on carrying the crusade against nature to the actual physical surface of the earth, on making the land over to serve as a kind of visible, external evidence of their accession to grace" (178).
30. John Quincy Adams, *Congressional Globe,* 1846, 339–42; Thomas Hart Benton, *Congressional Globe,* 1846, 917–18; Isaiah, 35:1: "And the desert shall rejoice and blossom as the rose."
31. Isaiah, 35:1: "And the desert shall rejoice and blossom as as the rose." Isaiah, 40:3: "Prepare ye the way of the Lord, make straight in the desert a highway for our God. 40:4: "Every Valley shall be exalted, and every mountain and hill shall be made low: and the crooked shall be made straight, and the rough places plain." Reverend Dwinell, quoted in John Todd, *The Sunset Land, or the Great Pacific Slope* (Boston: Lee and Shepard, 1870), 252; Henry Nash Smith, *Virgin Land: The American West As Symbol and Myth* (Cambridge, Mass.: Harvard University Press, 1950); Marx, *The Machine in the Garden.*
32. Frederick Jackson Turner, "The Significance of the Frontier in American History," *Annual Report of the American Historical Association for the Year 1893,* American Historical Association, 1894), 199–227.
33. Todd, *Sunset Land,* 146; G.J.Barker-Benfield, "The Spermatic Economy," *Feminist Studies,* 1, no. 1 (1972): 45–72.
34. Todd, *Sunset Land,* 125, 159, 160; Barker-Benfield, "Spermatic Economy," 51, 52.
35. Todd, *Sunset Land,* 233; Francis Bacon, "The Great Instauration," *Works,* ed. James Spedding, Robert Leslie Ellis, and Douglas Devon Heath, 14 vols. (London: Longmans Green, 1870), 4:29; Bacon, "Novum Organum" part 2, *Works,* 4:247. Todd, *Sunset Land,* 251.
36. Todd, *Sunset Land,* 124, 133, 219.
37. Richard White, *The Organic Machine: The Remaking of the Columbia River* (New York: Hill and Wang, 1995), 111–12.
38. Brigham Young and George A. Smith, quoted in Richard V.Francaviglia, *The Mormon Landscape: Existence, Perception, and Creation of a Unique Image in the American West* (New York: AMS Press, 1978), 84, 85. I thank Sarah Trainor for this reference.
39. Mark Fiege, *Irrigated Eden: The Making of an Agricultural Landscape in the American West* (Seattle: University of Washington Press, 1999), 11–19, 49–51, and quotation on 46.
40. Fiege, *Irrigated Eden,* 51, 208; Donald Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (New York: Pantheon, 1985), 308.
41. George Freeman, "Among the Irrigators of Fresno," *Overland Monthly* 9 (1887):621–27, quotation on 622; John Bennett, "The District Irrigation

Movement in California," *Overland Monthly* 29 (1897):252–57, quotation on 257; *Visalia Delta,* quoted in Worster, *Rivers of Empire,* 104; November 8, 1898; *Los Angeles Times,* August 10, 1905; Worster, *Rivers of Empire,* 308.

42. Worster, *Rivers of Empire,* 324–35.
43. Max Horkheimer, *The Eclipse of Reason* (New York: Oxford University Press, 1947), 109ff.

CHAPTER 6

1. Martin Lunenfeld, *1492: Discovery, Invasion, Encounter* (Lexington, Mass.: D.C.Heath, 1991), 118–19.
2. Lunenfeld, *1492: Discovery, Invasion, Encounter,* 119–21. Europa, dressed in flowing robes and wearing a crown, stares boldly out into the distance. She holds a scepter in her right hand and reaches down to grasp the cross of Christianity mounted on a spherical orb depicting the world, which she dominates by her power and knowledge. On either side are globes representing knowledge of the celestial and terrestrial spheres, while behind her is a grape arbor and beneath her a frieze of bulls heads symbolizing knowledge of agriculture and husbandry. Asia, partially draped in flowing silk and jeweled headdress and glancing downward, holds a burning urn of spices and incense, while Africa, bare-breasted, wearing only a partial cloth and head scarf and looking sideways, holds a fruited branch.
3. José Rabasa, "Allegories of Atlas," in *The Post-Colonial Studies Reader,* ed. Bill Ashcroft, Gareth Griffiths, and Helen Tiffin (London: Routledge, 1995), 358–64, quotations on 358; Gerhard Mercator, *Atlas; or A Geographicke Description of the World,* (1636), introd. by R.A. Skelton (Amsterdam: Theatrum Orbis Terrarum, 1968), 39–40. Mercator's *Atlas* codified the masculine/feminine oppositions introduced by earlier mapmakers. In his preface, he wrote that the Atlas would "set before your eyes, the whole world" as "in a mirror." Further, "This work then is composed of Geographie (which is a description of the knowne Earth and parts thereof) and Historie, which is *(Oculus Mundi)* the eye of the World." His world map depicted, on a flat surface, spherical projections of the Old World on the right and the New World on the left. In the four corners of the map, outside the circles containing the continents were four men who had set the bounds of the known world: Julius Caesar, Claudius Ptolemais, Gerardus Mercator, and Iudocus Hondius (co-author of the *Atlas).* Next to each, along the border toward the center, were allegorical depictions of the four elements—fire and air on the top; water and earth on the bottom. In the top center appeared the celestial globe, while in the bottom center was the now familiar picture of the four female continents. Europe appeared in the center, fully clothed and

crowned, holding a book and scepter, representing knowledge and power over the rest of the world. At her feet presenting her with gifts were Asia on the left offering jewels, while America and Africa, partially clothed appeared on the right.

4. Mercator, *Atlas,* 40.
5. Annette Kolodny, *The Lay of the Land: Metaphor As Experience and History in American Life and Letters* (Chapel Hill: University of North Carolina Press, 1975), 10–12; John Smith, "A Description of New England," in *Tracts and Other Papers Relating Principally to the Origin, Settlement, and Progress of the Colonies in North America, from the Discovery of the Country to the Year 1776,* 2 vols., ed. Peter Force (Washington, D.C.: Peter Force, 1836–38), 2:9; Thomas Morton, *New English Canaan,* in Force, ed., *Tracts and Other Papers,* 2:10.
6. Kolodny, *The Lay of the Land,* 14–17, quotations on 14, 17; George Alsop, "Character of the Province of Maryland," in *Narratives of Early Maryland, 1633–1684,* ed. Clayton Colman Hall (New York: Charles Scribner's Sons, 1910), quotations on 343–44; Robert Beverley, *History and Present State of Virginia* (London: R.Parker, 1705), 296–99.
7. Henry Nash Smith, *Virgin Land: The American West As Symbol and Myth* (Cambridge, Mass.: Harvard University Press, 1950), viii; Kolodny, *The Lay of the Land,* preface.
8. Henry Colman, *Address before the Hampshire, Franklin, and Hampden Agricultural Society Delivered in Greenfield, Oct. 23, 1833* (Greenfield, Mass.: Phelps and Ingersoll, 1833), 5–6, 15, 27.
9. Frank Norris, *The Octopus, A Story of California* (1901; reprint New York: Penguin, 1986), 127. I thank David Igler for bringing these passages to my attention.
10. Norris, *Octopus,* 127, 130–31.
11. John Salkin and Laurie Gordon, *Orange Crate Art: The Story of the Labels That Launched a Golden Era* (New York: Warner Books, 1976), 20ff. La Paloma used a seductive Mexican woman set within a cactus-covered desert made fruitful, while Orange Queen displayed a Mexican maiden holding a basketful of oranges in front of a round, ripened orange.
12. Ibid., 20ff. Rainbow oranges, grown and packed by J.J.Mclndoo of Tulare County, depicted a rainbow arching over fruit-laden orange groves with snow-covered Sierras in the background and sliced oranges and orange blossoms in the foreground.
13. Mark Fiege, *Irrigated Eden: The Making of an Agricultural Landscape in the American West* (Seattle: University of Washingon Press, 1999), 2, jacket illustration, and fig. 19. Mary Hallock Foote painted *The Irrigating Ditch* in 1889, showing a woman holding a young child looking tranquilly over an irrigation channel, while a man in the background labored in the fields planting crops on the land.

14. K.D.Kurutz and Gary F.Kurutz, *California Calls You: The Art of Promoting the Golden State, 1870 to 1940* (Sausalito, Calif.: Windgate Press, 2000), 25, 27, 29, 35. The Michigan Central Railroad advertised trips to California via "the Niagara Falls Route," with a brochure showing a Mexican-style hacienda set in an Edenic landscape of fruit trees and mountains, while the Santa Fe Railroad depicted a train emerging out of snow-covered mountains into arbors of orange laden trees dripping with fruit.
15. Eustace M.W.Tillyard, *The Elizabethan World Picture* (New York: Vintage, 1959), 42.
16. On landscape paintings as narrative moments, see William Cronon, "Telling Tales on Canvas: Landscapes of Frontier Change," in *Discovered Lands, Invented Pasts,* Jules David Prown, Nancy K.Anderson, William Cronon, Brian W.Dippie, Martha Sandweiss, Susan Prendergast Schoelwer, and Howard R.Lamar (New Haven, Conn.: Yale University Press, 1992), 37–87.
17. For representations and interpretations of the three paintings discussed below see, William H.Truettner, ed. *The West as America: Reinterpreting Images of the Frontier, 1820–1920* (Washington, D.C.: National Museum of Art, 1991), 120, 135, 136, 137.
18. Frank Norris, *The Pit, A Story of Chicago* (1903; reprint New York: Grove Press, 1956).
19. William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W.W. Norton, 1991). Cronon quotes the passage here from Norris's *The Pit* on the page preceding his "Prologue."
20. Norris, *The Pit,* 62.
21. Ibid., 60–63.
22. On Karl Marx's concept of the endowment of money with organic, living properties and its application among the Indians of the Cauca valley in Colombia, see Michael Taussig, "The Genesis of Capitalism amongst a South American Peasantry: Devil's Labor and the Baptism of Money," *Comparative Studies in Society and History* 19 (1977):130–53.
23. Norris, *The Pit,* 374.
24. Donald Worster, *Nature's Economy: A History of Ecological Ideas,* 2d ed. (New York: Cambridge University Press, 1995); Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (San Francisco: Harper Collins (1980), ch. 1. The following is drawn from Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England* (Chapel Hill: University of North Carolina Press, 1989), 254–57.
25. Worster, *Nature's Economy,* Roderick Nash, *Wilderness and the American Mind,* 3d ed. (New Haven, Conn.: Yale University Press, 1982), 85, 122–25.

26. George Economou, *The Goddess Natura in Medieval Literature* (Cambridge, Mass.: Harvard University Press, 1972); Carolyn Merchant, *The Death of Nature,* 10.
27. Henry David Thoreau, "Thursday" in *A Week on the Concord and Merrimac Rivers* in Carl Bode, ed., *The Portable Thoreau* (New York: Penguin, 1977), 196. John Muir, *The Mountains of California* (Berkeley: Ten Speed Press, 1977), 336.
28. Henri Frankfort, H.A.Frankfort, John A. Wilson, Thorkild Jacobsen, and William A. Irwin, *Before Philosophy: The Intellectual Adventure of Ancient Man* (Baltimore: Penguin, 1949); Calvin Martin, *Keepers of the Game: Indian Animal Relationships and the Fur Trade* (Berkeley and Los Angeles: University of California Press, 1978); William Christie MacLeod, "Conservation among Primitive Hunting Peoples," *Scientific Monthly* 43 (1936):562–66.
29. Thoreau, "Concord River" in *A Week on the Concord and Merrimac Rivers* in Bode, ed., *Portable Thoreau,* 145; "Thursday," 197; "Friday," 222.
30. Nash, *Wilderness and the American Mind,* ch. 3, 4; Leo Marx, *The Machine in the Garden: Technology and the Pastoral Ideal in America* (New York: Oxford University Press, 1964); Annette Kolodny, *The Lay of the Land;* Annette Kolodny, "Honing a Habitable Landscape: Women's Images for the New World Frontiers," in *Women and Language in Literature and Society,* ed. Sally McConnell-Ginet, Ruth Borker, and Nelly Furman (New York: Praeger, 1980), 188–204.
31. Thoreau, "A Winter Walk," in Bode, ed. *Portable Thoreau,* 67; "The Maine Woods," 100; "Walking," 621; Muir, *Mountains of California,* 362.
32. Thoreau, "Friday," in *A Week on the Concord and Merrimac Rivers* in Bode, ed., *Portable Thoreau,* 222; "Walking," 590; "A Winter Walk," 60; John Muir, *Our National Parks* (Boston: Houghton Mifflin, 1901), 2.
33. Thoreau, "Friday," in *A Week on the Concord and Merrimac Rivers* in Bode, ed., *Portable Thoreau,* 221. Muir, *Mountains of California,* 84; ed., *Portable Thoreau,* 149; Thoreau, "Saturday," in *A Week on the Concord and Merrimac Rivers* in Bode, "Life Without Principle," 633.
34. Bode, ed., *Portable Thoreau,* 151, 158; Emerson quoted in Nash, *Wilderness and the American Mind,* 126.
35. Thoreau, "Thursday," in *A Week on the Concord and Merrimac Rivers* (1849) in Bode, ed., *Portable Thoreau,* 193–94; Thoreau, "Walking," in Bode, ed., *Portable Thoreau,* 621; Muir, *Mountains of California,* 84–85, 246.
36. Ibid., 361.
37. Thoreau, "The Beanfield," in *Walden* (Boston: Ticknor and Fields, 1854), 168–71.

38. Walter M.Kendrick, "Earth of Flesh, Flesh of Earth: Mother Earth in the Faerie Queen," *Renaissance Quarterly* 27 (1974):548–53; George Perkins Marsh, *Man and Nature* (Cambridge, Mass.: Belknap Press, 1965 [1864]), 36.
39. Marsh, *Man and Nature,* 35–36, 38.
40. Bernhard Fernow, *Economics of Forestry* (New York: Thomas Y.Crowell, 1902), 2, 17.
41. Gifford Pinchot, *Breaking New Ground* (Washington, D.C.: Island Press, 1947), quotations on 323, 326.
42. Theodore Roosevelt, "Opening Address by the President," in *Proceedings of a Conference of Governors in the White House, May 13–15, 1908,* ed. Newton C.Blanchard (Washington, D.C.: Government Printing Office, 1908), 6.
43. Theodore Roosevelt, *Wilderness Writings,* ed. Paul Schullery (Salt Lake City: Peregrine Smith Books, 1986), 11–27.
44. Cardinal James Gibbons, "Greetings," in *Proceedings of the Second National Conservation Congress at Saint Paul, September 5–8, 1910* (Washington, D.C.: National Conservation Congress, 1911), 3.
45. Mrs. Mathew Scott, "Address," in *Proceedings of the Fourth National Conservation Congress, Indianapolis, October 14, 1912* (Indianapolis: National Conservation Congress: 1912), 250–51.
46. Carolyn Merchant, "Women of the Progressive Conservation Movement, 1900–1916," *Environmental Review* 8, no. 1 (1984):57–85.
47. Ibid., Vera Norwood, *Made from this Earth: American Women and Nature* (Chapel Hill: University of North Carolina Press, 1993); Polly Welts Kauffman, *National Parks and the Woman's Voice: A History* (Albuquerque: University of New Mexico Press, 1996); Jennifer Price, *Flight Maps: Adventures with Nature in Modern America* (New York: Basic Books, 1999); Glenda Riley, *Women and Nature: Saving the 'Wild" West* (Lincoln: University of Nebraska Press, 1999); Isabella Bird, *A Lady's Life in the Rocky Mountains* (Norman: University of Oklahoma Press, 1960; originally published serially in *Leisure Hour,* 1878); Mary Austin, *The Land of Little Rain* (1903; reprint Boston: Houghton Mifflin, 1950); Olive Thorne Miller, *Bird Ways* (Boston: Houghton Mifflin, 1885); Mabel Osgood Wright, *Birdcraft: A Field Book of Two Hundred Song, Game, and Water Birds* (New York: Macmillan, 1895); Sarah Orne Jewett, *A White Heron: A Story of Maine* (New York: Crowell, 1963); Florence Merriam Bailey, *A-Birding on a Bronco* (Boston: Houghton Mifflin, 1896).
48. Mark Stoll, *Protestantism, Capitalism, and Nature in America* (Albuquerque: University of New Mexico Press, 1997), 166–68.
49. J.Horace McFarland, *Proceedings of a Conference of Governors in the White House, Washington, D.C., May 13–15, 1908* (Washington D.C.: Government Printing Office, 1909), 140. See also Augustus Gardner,

Our Children (Hartford, Conn.: Belknap and Bliss, 1872), 36, on "the mountains and forests of the west" as "vast reservoirs of health and strength" from which "we may annually recruit our exhausted energies at every fresh contact with our worthy mother earth."

50. Roderick Nash, *Wilderness and the American Mind,* 3d ed. (New Haven, Conn.: Yale University Press), 141–42.
51. Paul Santmire, "Historical Dimensions of the American Crisis," in *Western Man and Environmental Ethics,* ed. Ian G.Barbour (Reading, Mass.: Addison-Wesley, 1973), 82–85.

CHAPTER 7

1. Roland Nelson, Penobscot, as recorded by Frank Speck, "Penobscot Tales and Religious Beliefs," *Journal of American Folklore* 48, no. 187 (1935):1–107, quotation on 75. This corn mother origin story is a variant on a number of eastern United States and Canadian transformative accounts, recorded from oral traditions, that attribute the origins of corn to a mythical corn mother who produces corn from her body, grows old, and then instructs her lover or son how to plant and tend corn. The killing of the corn mother in most of the origin stories may symbolize a transition from gathering/hunting to active corn cultivation. The snake lover may be an influence from the Christian tradition or a more universal symbol of the renewal of life (snakes shed their skins) and/or the male sexual organ. On corn mother origin stories, see John Witthoft, *Green Corn Ceremonialism in the Eastern Woodlands* (Ann Arbor: University of Michigan Press, 1949), 77–85; Joe Nicholas, Malechite, Tobique Point, Canada, August 1910, as recorded by W.H.Mechling, *Malechite Tales* (Ottawa: Government Printing Bureau, 1914), 87–88; for the Passamaquoddy variant, see Mrs. W.Wallace Brown, "The Legend of Indian Corn," *Journal of American Folklore* 3 (1890); 214; for Creek and Natchez variants, see J.R. Swanton, "Myths and Tales of the Southeastern Indians," *Bulletin of the Bureau of American Ethnology* 88 (1929) 9–17; on Iroquois variants, see Jesse Cornplanter, *Legends of the Longhouse* (Philadelphia: J.B.Lippincott, 1938), and Arthur Parker, "Iroquois Use of Maize and Other Food Plants," *New York State Museum Bulletin* no. 144 (1910):36–39; and "The Corn Mother in America and Indonesia," *Anthropos* 46 (1951):853–914. Examples of corn mother origin stories from the Southwest include the Pueblo emergence from the dark interior of the earth into the light of the fourth world where corn mother plants Thought Woman's gift of corn. See Ramón Gutiérrez, *When Jesus Came the Corn Mothers Went Away* (Stanford, Calif.: Stanford University Press, 1991). For a discussion of the relationship of the corn mother to Mother Earth, see Sam Gill, *Mother Earth: An American Story* (Chicago: University of Chicago Press, 1987), 4, 125.

2. On Great Plains environmental histories as progressive and declensionist plots, see William Cronon, "A Place for Stories: Nature, History, and Narrative," *Journal of American History* 78, no. 4 (1992):1347–76. The Indian and European origin stories can be interpreted from a variety of standpoints other than the declensionist and progressive narrative formats I have emphasized here (such as romance and satire). Additionally, the concepts of desert, wilderness, and garden are nuanced and elaborate motifs that change valences over time.
3. Genesis 1, J.Baird Callicott, "Genesis Revisited: Murian Musings on the Lynn White, Jr. Debate," *Environmental Review,* 14, nos. 1–2 (1990):65–92.
4. Benjamin Franklin, "Remarks Concerning the Savages of North America," in *Franklin's Wit and Folly: The Bagatelles,* ed. Richard E.Amacher (New Brunswick, N.J.: Rutgers University Press, 1953), 89–98. Franklin's story is probably satirical rather than literal.
5. Francis Paul Prucha, *The Indians in American Society: From the Revolutionary War to the Present* (Berkeley and Los Angeles: University of California Press, 1985), 6–8, quotation on 7.
6. Ibid., 7.
7. Ibid., 12, 15.
8. George P.Belden, *Belden, the White Chief; or Twelve Years among the Wild Indians of the Plains* (Cincinnati: C.F.Vent, 1870), 92,166, 438, cited in Mark David Spence, *Dispossessing the Wilderness: Indian Removal and the Making of the National Parks* (New York: Oxford University Press, 1999), 38.
9. Samuel Bowles, *The Switzerland of America* (Hartford, Conn.: Hartford Publishing, 1869), 145–47, cited in Spence, *Dispossessing the Wilderness,* 27.
10. Prucha, *Indians in America,* 18–22, quotations on 20 and 22.
11. Ibid., 23.
12. Ibid., 53.
13. Chief Luther Standing Bear, *Land of the Spotted Eagle* (Boston: Houghton Mifflin, 1933), xix.
14. Neal Salisbury, "Red Puritans: The 'Praying Indians' of Massachusetts Bay and John Eliot," *William and Mary Quarterly,* 3d sec., 31, no. 1 (1974):27–54; William Simmons, "Conversion from Indian to Puritan," *New England Quarterly* 52, no. 2 (1979):197–218.
15. Franklin, "Remarks concerning the Savages of North America," 91.
16. J.Baird Callicott, "The Wilderness Idea Revisited: The Sustainable Development Alternative," *Environmental Professional* 13 (1991):236–45.
17. William Bradford, *Of Plimoth Plantation* (Boston: Wright and Potter, 1901), 94–95; George Catlin, *North American Indians,* 2 vols. (1844; reprint Philadelphia: Leary, Stuart, 1913); 1:294–95.

18. Spence, *Dispossessing the Wilderness,* 55–70; Robert H.Keller and Michael F.Turek, *American Indians and National Parks* (Tucson: University of Arizona Press, 1998), 22–25. On Indians and tourism in the National Parks, see also Philip Burnham, *Indian Country, God's Country: Native Americans and the National Parks* (Washington, D.C.: Island Press, 2000); on hunting and poaching in Yellowstone, see Karl Jacoby, *Crimes against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation* (Berkeley and Los Angeles: University of California Press, 2001), 81–146.
19. Spence, *Dispossessing the Wilderness,* 71–100, quotations on 78, 87; Keller and Turek, *American Indians and National Parks,* 43–64.
20. Rebecca Solnit, "Up the River of Mercy," *Sierra*, 77, no. 6 (1992):50–57, 78–84; John Muir, *My First Summer in the Sierra* (New York: Penguin, 1987 [1911], 58, 226; Spence, "Dispossessing the Wilderness," 101–32, Harris quotation on 109; Keller and Turek, *American Indians and National Parks,* 20–22.
21. Mary Austin, *The Land of Little Rain* (1903; reprint Boston: Houghton Mifflin, 1950) 1, 33, 63. On Austin's view of Indians and the desert see Vera Norwood, "Heroines of Nature: Four Women Respond to the American Landscape," *Environmental Review,* 8, no. 1 (1984): 34–56, esp. 41–44. Another environmentalist sympathetic to Indians was John Wesley Powell, director of the Bureau of Ethnology and author of the *Report on the Lands of the Arid Region of the United States,* ed. Wallace Stegner (Cambridge, Mass.: Harvard University Press, 1962 [1878]).
22. Winthrop Jordan, *White over Black: American Attitudes toward the Negro, 1550–1812* (1968; reprint New York: W.W.Norton, 1977), 23–28.
23. Ibid., 524–25, esp. n. 22.
24. Donald Worster, *The Wealth of Nature: Environmental History and the Ecological Imagination* (New York: Oxford University Press, 1993), 9–10.
25. Edie Yuen, Lisa J.Bunin, and Tim Stroshane, "Multicultural Ecology: An Interview with Carl Anthony," *Capitalism, Nature, Socialism* 8, no. 3 (1997):41–62, esp. 49.
26. Thomas Jefferson, *Notes on the State of Virginia* (London: J.Stockdale, 1787), quotations from queries 19:276–77 and 14:229–34.
27. Robert Bullard, "Environmental Racism and the Environmental Justice Movement," in Bullard, ed., *Confronting Environmental Racism: Voices from the Grassroots* (Boston: South End Press, 1993), 15–16.
28. Henry David Thoreau, *Walden and Civil Disobedience* with an introduction by Michael Meyer (New York: Penguin, 1983), introduction, 29–36, quotations from "Walden" on 216, from "Civil Disobedience," on 389, 390, 391. On Thoreau's concept of community see Roderick Nash, *The Rights of Nature: A History of Environmental*

Ethics (Madison: University of Wisconsin Press, 1989), 37. On Thoreau as an opponent of slavery, see Patricia Nelson Limerick, "Hoping against History," in *Justice and Natural Resources: Concepts, Strategies, and Applications,* ed. Kathryn M.Mutz, Gary C.Bryner, and Douglas S.Kenny (Washington, D.C.: Island Press, 2002), 343.

29. Thomas W.Hanchett, *Sorting out the New South City: Race, Class, and Urban Development in Charlotte, 1875–1975* (Chapel Hill: University of North Carolina Press, 1998), 116–44; Robert Woods, ed., *The City Wilderness: A Settlement Study* (Boston: Houghton Mifflin, 1898), 1–2; Booth Tarkington, *The Turmoil, a Novel* (New York: Harper and Brothers, 1915), 1–5.
30. Jeffrey Romm, "The Coincidental Order of Environmental Injustice," in Mutz, Bryner, and Kenny, eds., *Justice and Natural Resources,* 117–38, quotations on 122–23.
31. Yuen, Bunin, and Stroshane, "Interview with Carl Anthony," 50; Nash, *The Rights of Nature,* 38–39; Stephen Fox, *John Muir and His Legacy: The American Conservation Movement* (Boston: Little, Brown, 1981), 41–43, quotations on 42; John Muir, *A Thousand-Mile Walk to the Gulf (San* Francisco: Sierra Club Books, 1991), quotation on xvi.
32. Muir, *Thousand Mile Walk,* 25.
33. Ibid., 25, 31.
34. Ibid., 30, 60.
35. Zora Neale Hurston, *Their Eyes Were Watching God* (1937; reprint New York: Harper Collins, 1990), 129, 130.
36. Ibid., 25, 161–62, 169.
37. Patricia Nelson Limerick, "Hoping against History," 340–42; Aldo Leopold, "The Land Ethic," in *A Sand County Almanac* (New York: Oxford University Press, 1949), 204.
38. Nash, *The Rights of Nature,* 6–7, 200–213, quotations on 202, 203; Leopold, "The Land Ethic," in 202. Nash points out that "slavery in the United States was not negotiated away. For similar reasons it might be unreasonable to expect that what Aldo Leopold was the first to call 'the enslavement of…earth' could be abolished without profound social disruption"; Nash, *The Rights of Nature,* 8. The legacy of slavery as extended to the earth led Leopold to an ethic of cooperation among people and between people and nature. In his "Conservation Ethic" of 1933, Leopold wrote, "Civilization is not…the enslavement of a stable and constant earth. It is a state of mutual and interdependent cooperation between human animals, other animals, plants, and soil, which may be disrupted at any moment by the failure of any of them"; see Leopold, "The Conservation Ethic," in *The River of the Mother of God and other Essays by Aldo Leopold,* ed. Susan L.Flader and J.Baird Callicott (Madison: University of Wisconsin Press, 1991), 183.
39. Limerick, "Hoping against History," 344–45.

40. Robert Bullard, *Dumping in Dixie: Race, Class, and Environmental Quality* (Boulder, Colo.: Westview Press, 1990).
41. Gayatri Chakravorty Spivak, "Can the Subaltern Speak?" in *Marxism and the Interpretation of Culture,* ed. Cary Nelson and Lawrence Grossberg (London: Macmillan, 1988), reprinted in *The Post-Colonial Studies Reader,* ed. Bill Ashcroft, Gareth Griffiths, and Helen Tiffin (New York: Routledge, 1995), 24–28.
42. Hawley Truax, "Minorities at Risk," *Environmental Action,* January/ February (1990): 20–21; Charles Lee, "Toxic Wastes and Race in the United States: A National Report on the Racial and Socio-Economic Characteristics of Communities with Hazardous Waste Sites" (New York: United Church of Christ Commission for Racial Justice, 1987); Jesus Sanchez, "The Environment: Whose Movement?" *Green Letter* 5, no. 1 (1989):3–4, 14–16; Philip Shabecoff, "Environmental Groups Faulted for Racism," *San Francisco Chronicle,* Feb. 1,1990; Robbin Lee Zeff, Marsha Love, and Karen Stults, *Empowering Ourselves: Women and Toxics Organizing* (Arlington, Va.: Citizen's Clearing House for Hazardous Wastes, n.d.); Andrew Szasz, *Ecopopulism: Toxic Waste and the Movement for Environmental Justice* (Minneapolis: University of Minnesota Press, 1994).
43. J.M.Blaut, *The Colonizer's Model of the World: Geographical Diffusionism and Eurocentric History* (New York: Guilford Press, 1993); see also Ashcroft, Griffith, and Tiffin, *The PostColonial Studies Reader.*

CHAPTER 8

1. Richard Keller Simon, "The Formal Garden in the Age of Consumer Culture: A Reading of the Twentieth-Century Shopping Mall," in *Mapping American Culture,* ed. Wayne Franklin and Michael Steiner (Iowa City: University of Iowa Press, 1992), 124–25, 231–50.
2. Margaret Crawford, "The World in a Shopping Mall," in *Variations on a Theme Park,* ed. Michael Sorkin (New York: Hill and Wang, 1992), 3–30.
3. David Guterson, "Enclosed, Encyclopedic, Endured: One Week at the Mall of America," in *A Forest of Voices: Reading and Writing the Environment,* ed. Chris Anderson and Lex Runciman (Mountain View, Calif.: Mayfield, 1995), 124–36; see esp. 126,128, quotation on 126; Crawford, "The World in a Shopping Mall," 27; Simon, "The Formal Garden in the Age of Consumer Culture," 244.
4. Crawford, "The World in a Shopping Mall," 7; Simon, "The Formal Garden in the Age of Consumer Culture," 238; Guterson, "Enclosed, Encyclopedic, Endured," 132–34.
5. Guterson, "Enclosed, Encyclopedic, Endured," 133–34.
6. Ibid., 132.

7. Crawford, "The World in a Shopping Mall," 9, 28–30; Bruce Horovitz, "Malls are Like, Totally Uncool, Say Hip Teens," *USA Today,* May 1, 1996,1–2.
8. Philip Elmer-Dewitt, "Fried Gene Tomatoes," *Time,* May 30, 1994, 54–55.
9. Francesca Lyman, "Are We Redesigning Nature in Our Own Image? An Interview with Jeremy Rifkin," *Environmental Action,* April 1983, 20–25; P.J.Regal, "Models of Genetically Engineered Organisms and their Ecological Impact," in *Ecology of Biological Invasions in North America and Hawaii,* ed. Harold Mooney (New York: Springer-Verlag, 1986); Marc Lappé, *Broken Code: The Exploitation of DNA* (San Francisco, Calif.: Sierra Club Books, 1984); Marc Lappé and Britt Bailey, *Against the Grain: Biotechnology and the Corporate Takeover of Your Food* (Monroe, Maine: Common Courage Press, 1998); Jon Beckwith, *Making Genes, Making Waves* (Cambridge, Mass.: Harvard University Press), 2002.
10. Robin Mather, *A Garden of Unearthly Delights: Bioengineering and the Future of Food* (New York: E.P.Dutton, 1995), 25–49; Elmer-Demitt, "Fried Gene Tomatoes," 54, 55.
11. Mather, *Garden of Unearthly Delights,* 27–30, 42; Herb Greenberg, "Calgene's Biotech Bounty Disappears From Grocers' Shelves," *San Francisco Chronicle,* Jan. 17, 1995, B1, B3.
12. Mather, *Garden of Unearthly Delights,* 31–33, 44–46.
13. Michael Pollan, "Genetic Pollution of Corn in Mexico," *New York Times,* Dec. 9, 2001.
14. Mather, *Garden of Unearthly Delights,* 84–94, quotations on 90, 91–92.
15. Ibid., 121–22.
16. Jane Kay, "Frankenfish Spawning Controversy," *San Francisco Chronicle,* April 29,2002, A4.
17. Mather, *Garden of Unearthly Delights,* 35, 80, 131–33; Claude Gelé, "L'Agriculture manque de robots," *Sciences and Techniques* 26 (1986): 22–29 and cover illustration. Such technology, which delivers perfect fruit, pure milk, and lean meat to the supermarket, masks the labor of the field and processing plant. Much of that labor now comes from Mexico, legally or illegally, via the tomato, chicken, and pork trails. Men and women work on their feet all day grading, packing, and inspecting tomatoes. Men who inject cows, mix feed, and clean milking equipment often labor under bitterly cold or hot, humid conditions. Women who catch and correct chickens missed by the eviscerating machinery work under cold, moist conditions that may cause illnesses leading to job loss. Yet for industry, the problems are offset by the advantages. (Mather, *Garden of Unearthly Delights,* 43–45. 80–82, 132–33.)
18. Roger Lewin, "In the Beginning was the Genome," *New Scientist* 21, no. 1726 (1990): 34–38; Tom Wilkie, *Perilous Knowledge: The Human*

Genome Project and Its Implications (Berkeley and Los Angeles: University of California Press, 1993); Timothy F.Murphy and Marc C.Lappé, eds., *Justice and the Human Genome Project* (Berkeley and Los Angeles: University of California Press, 1994).

19. Lewin, "In the Beginning was the Genome," 34, 35, 38.
20. Jeremy Rifkin, Algeny (New York: Penguin, 1984); Jeremy Rifkin, *The Biotech Century: Harnessing the Gene and Remaking the World* (New York: Jeremy P.Tarcher.Putnam, 1998); Marc Lappé and Britt Bailey, eds., *Engineering the Farm: Ethical and Social Aspects of Agricultural Biotechnology* (Washington, D.C.: Island Press, 2002); Joseph S.Alper, Catherine Ard, Adrienne Asch, Peter Conrad, Lisa N.Geller, and Jon Beckwith, eds., *The Double-Edged Helix: Social Implications of Genetics in a Diverse Society* (Baltimore: Johns Hopkins University Press, 2002).
21. Charles Krauthammer, "A Special Report on Cloning," *Time,* March 10, 1997, 60–61, quotation on 60; J.Madeleine Nash, "The Age of Cloning," *Time,* March 10, 1997, 62–65; Sharon Begley, "Little Lamb Who Made Thee?" *Newsweek,* March 10, 1997, 53–57.
22. Nash, "The Age of Cloning," 64–65.
23. Krauthammer, "Special Report," 61; Tim O'Brien, illustration for Nash, "The Age of Cloning," 62–63; Nash, "The Age of Cloning," 65; Jeffrey Kluger, "Will We Follow the Sheep?" *Time,* March 10, 1997, 67–72; Robert Wright, "Can Souls be Xeroxed?" *Time,* March 10, 1997, 73.
24. Kenneth L.Woodward, "Today the Sheep, Tomorrow the Shepherd," *Newsweek,* March 10, 1997, 60; Kluger, "Will We Follow the Sheep?" 70–72.
25. James Shreeve, "Sunset on the Savanna," *Discover,* July, 1996,116–24, esp. 117.
26. Misia Landau, *Narratives of Human Evolution* (New Haven, Conn.: Yale University Press, 1991), 1–12.
27. Shreeve, "Sunset on the Savanna," 118, 125.
28. Charles Darwin, *The Descent of Man and Selection in Relation to Sex,* 2 vols. (New York: D.Appleton, 1873), vol. 2, ch. 21, 372, 386.
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CHAPTER 9

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