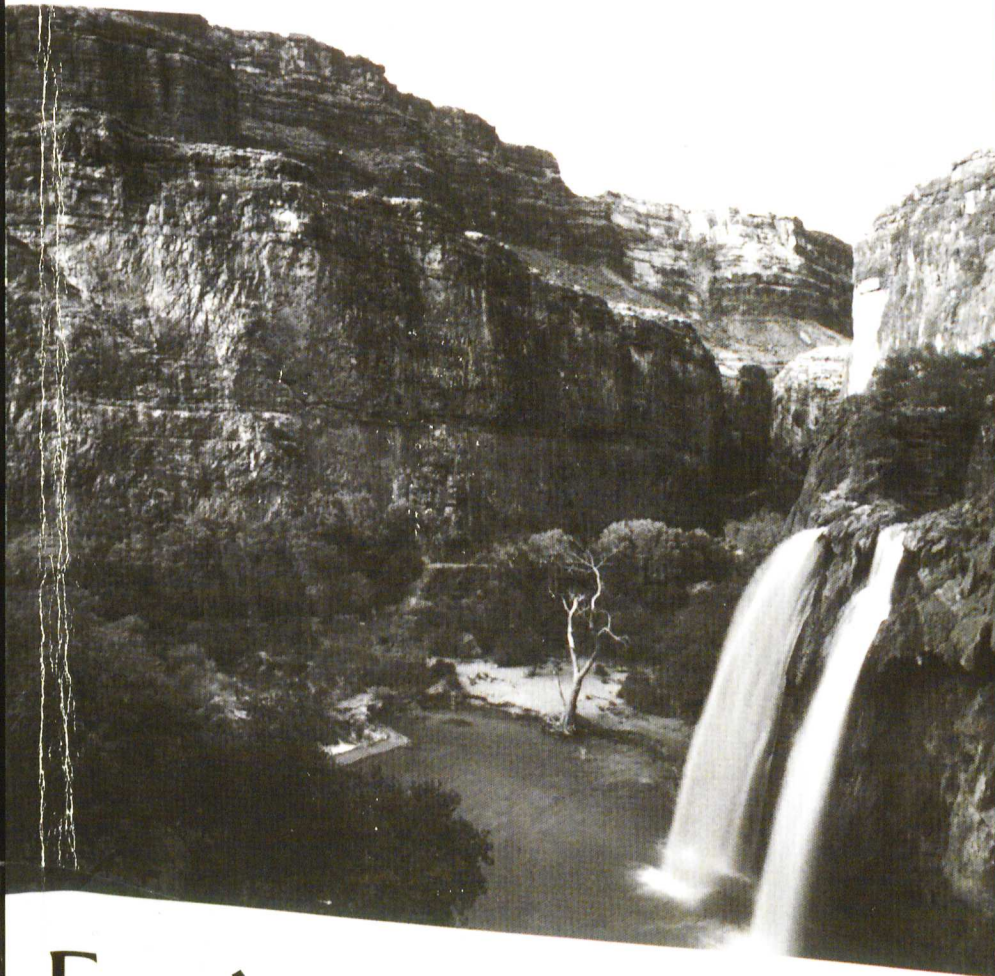


Scholar

Ramachandra Guha

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SERIES EDITOR, MICHAEL ADAS



Environment
Environmentalism
A GLOBAL HISTORY

Series Editor's Preface

Of the several processes that all human societies in all ages have had in common, none has been more fundamental than their continual interaction with their natural environment. In fact, more than any other aspect of human endeavor, the diverse modes of human societal interaction with the larger ecological setting provide the basis for a genuinely global history of humanity. But, unlike so many of the other themes and patterns from which world history can be constructed, environmental history transcends the human experience. Due to the profound technological and scientific transformations that have occurred over the past millennium, it has come to effect—often fatally in recent centuries—every species of living creature on earth.

In view of its centrality, it is rather remarkable that serious work on the global dimensions of the history of human responses to and impact upon their environments has, with important exceptions, been undertaken only in the last three or four decades. There were, of course, important ecological dimensions to the patterns of societal development that Ibn Khaldun delineated in his fourteenth-century treatise *The Muqaddimah*, especially in his stress on the ebb and flow of pastoral nomadic and sedentary adaptations in the history of North Africa and the Middle East. And George Perkins Marsh's magisterial meditation on *Man and Nature* was published nearly a century and a half ago. But it is only since the 1960s, that world and cross-cultural historians, led by William H. McNeill, Alfred Crosby, and more recently John McNeill, have embarked on sustained and thoroughly documented explorations of the diverse patterns of social and environmental interactions over time.

Thus far, much of the research and writing that these pioneering historians have inspired has been focused on specific ecosystems or regional complexes of environmental patterns. And almost all of the work done thus far, including that of more globally-oriented pioneers like McNeill and Crosby, has concentrated on actual processes of human interventions into the natural world and their consequences for both human societies and affected plant and animal species. Though a considerable amount has been written on the attitudes

towards the natural world exhibited by specific cultures or civilizations, little work has yet appeared that attempts to study these cross-culturally or from a global perspective. The most important exception to this general trend is Clarence Glacken's massive *Traces on the Rhodian Shore*, which surveys responses to the environment from ancient times to the modern era. But Glacken's work is oriented to European thinkers and civilizations and to the ancient Mediterranean milieu that give rise to them.

Given this situation, Ramachandra Guha's *Environmentalism: A Global History* is an especially welcome addition to the Longman World History series. Guha's incisive and wide-ranging survey of environmental thinking and the movements it has spawned is genuinely cross-cultural and global in scope. His focus is environmentalism in the modern age, but he delineates and explores in depth a multiplicity of approaches to those issues, with particular emphasis on the often variant currents of the latter half of the twentieth century. Ideas about the environment and movements aimed at focussing attention on the causes of its degradation and the ways to protect it are set in the different socioeconomic and political contexts which gave rise to them. But Guha is also sensitive to the ways in which thinking about ecology is reworked or transformed when it is exposed to international or intercultural influences. He seeks to identify the commonalities and differences in environmental thinking and activism through case studies drawn from the experience of areas as diverse as the United States, the former Soviet Union, China, India, Africa and Brazil. Guha candidly assesses the strengths and shortcomings of each of these strands of environmentalism as well as their contributions to the coalescence of a global environmental consciousness.

In many ways Ramachandra Guha is the ideal person to author the first genuinely global history of environmentalism. Over the past two decades, his many fine books and articles have earned him the reputation as one of the foremost thinkers on ecological issues relating to South Asia, historically one of the pivotal regions in environmental history for reasons he elucidates in the study that follows. In recent years, building on his regional expertise, Guha has become one of the more provocative and perceptive commentators on environmentalism in its cross-cultural and global dimensions. He has made a convincing case for the importance of understanding the often fundamental differences that separate Euro-American environmental activists and theorists and those who argue from the perspective of the post-colonial societies, where the great majority of humanity lives. He has placed great emphasis on the critical distinctions between

strains of ecological activism based on preservationist, conservationist, earth first, and human accomodationist priorities. His capacity to identify and analyze the central precepts of these different strands of environmentalism, in combination with his well-informed critiques of each of them in the larger context of the current global predicament, render *Environmentalism: A Global History* a lively and engaging study of ideas and debates that all of us will find central to our lives in the twenty-first century.

MICHAEL ADAS

Series Editor

Rutgers University at New Brunswick

Author's Preface

The roots of this book go back to two gloriously happy years I spent working at Yale University in the mid 1980s. On the basis of my own work in India I had imagined environmentalism to be principally a question of social justice, of allowing the poor to have as much claim on the fruits of nature as the powerful. But living and teaching in the United States I was to come face-to-face with a rather different kind of environmentalism, which shifted attention away from humans towards the rights of plants, animals and wild habitats. I have ever since been fascinated by the diversity within the global environmental movement. This book explores the part played by different cultural and national traditions in the making and shaping of that diversity.

I returned to India from the USA in 1987, but have gone back several times since, to renew acquaintance with and deepen my understanding of American environmentalism. More recently, I spent the academic year 1994–95 in Germany, a country that is unquestionably the leader within Europe in matters environmental, and is home also to the German Greens, the protest movement which became a political party. Briefer trips to Latin America in 1994, to Russia in 1996, and to Southern Africa in 1997, allowed a glimpse of the problems and possibilities of environmentalism in those territories.

These forays, short and long, have been paid for by hospitable universities and indulgent foundations who have helped me challenge one of the unacknowledged taboos of international scholarship. For the way that the world is structured, Brazilians may write about Brazil, Nigerians about Nigeria, Bangladeshis about Bangladesh. But broader works of contrast and comparison, books that are not restricted to one country but which take the world as their oyster, are written from the comfortable citadels of a great and prosperous university in Europe or the United States. This prejudice is not cultural or racial, but merely geographical. Global histories, be they of environmentalism, feminism, liberalism or fundamentalism, are generally the handiwork of people working and teaching in the northern half of the globe. It is as difficult for a scholar of British origin to

write a global history living in Bogota as it is easy for an Indian while based in Indianapolis.

My thanks then, first of all, to the School of Forestry and Environmental Studies at Yale University. Two colleagues at Yale, Bill Burch and Joe Miller, and two students, Mike Bell and Joel Seton, encouraged me to move beyond what had been, until then, a near-obsessive concern with the history and politics of my own country. Next in chronological order comes the University of California at Santa Barbara, whose invitation in 1989 to deliver the Ninth Steven Manley Memorial Lecture forced me to think more seriously about the comparative aspects of the environmental question. The arguments of that lecture were given a firmer empirical basis in the year I spent at the Wissenschaftskolleg zu Berlin, whose magnificently efficient library staff chased and procured dozens of obscure references and out-of-print books. Other institutions that have helped materially include the University of California at Berkeley; the Harry and Frank Guggenheim Foundation, New York; the Social Science Research Council, New York; and the Nehru Memorial Museum and Library, New Delhi: my thanks to all of them.

The themes and arguments of this book have been shaped by numerous conversations across the continents. I have learnt much from three scholars whose interests exemplify the cross-cultural character of the environmental movement: from Juan Martinez-Alier, a Spaniard most at home in Ecuador and Cuba; from Mike Bell, a Rhode Islander who happily mixes with Little Englanders; and from Wolfgang Sachs, a Bavarian radical with a keenly developed insight into the practice of the Gujarati Mahatma, Gandhi. There are other friends in Europe and American with whom I have argued fiercely or gently but always (to me, at any rate) productively, and yet others who have passed on valuable tips and sources. I thank here William Beinart, David Brokensha, J. Peter Brosius, Louise Fortmann, Andrew Hurrell, Arné Kalland, Margit Mayer, Arné Naess, Paul Richards, David Rothenberg, Katherine Snyder, Carol Warren and Donald Worster. I owe a particular debt to K. Sivaramakrishnan (of Yale, again), the source of a steady stream of books and articles impossible to get hold of in India.

To come home now, to the students and scholars of the Indian environmental movement, the college of colleagues to whom I perhaps owe most of all. Discussions over many years with Anjan Ghosh, Madhav Gadgil and Shiv Visvanathan have helped me more clearly see India in the cold light of the world, and the world through the warm glow of India. I have also been challenged and inspired by the

verse and zest of younger colleagues such as Amita Baviskar, Ashish Kothari, Mahesh Rangarajan and Nandini Sundar. André Béteille, a distinguished senior scholar, and Keshav Desiraju, an experienced environmental administrator, read and helpfully commented on an earlier draft. For valuable comments on the manuscript I am indebted to the following reviewers: Randall Dodgen (Sonoma State University); Robert Entenmann (St. Olaf College); Vera Reben (Shippensburg University); Cathy Skidmore-Hess (Georgia Southern University); Tracey Steele (Sam Houston State University). I would also like to thank my editors, Pam Gordon at Addison Wesley Longman (New York) and Rukun Advani at Oxford University Press (New Delhi) for their critical support to the project.

But it is, of course, the editor of this series who made the book possible, who gently nudged all that talking and listening towards the more reliable medium of print. Michael Adas invited me to write on global environmentalism, waited trustingly as I missed one deadline after another, and then, when the draft chapters finally began to arrive, sent them back with meticulously detailed comments. It is a pleasure to thank him for all this, and a delight to remember those happy days at Yale when Michael and I first met.

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Going Green

The environmental movement is a child of the sixties that has stayed its course. Where other manifestations of that decade of protest—pacifism, the counter-culture and the civil rights struggle—have either lost out or lost their way, the green wave shows no sign of abating. The environmental movement has refused to go away and, some would say, refused to grow up, retaining the vigor and intensity but also the impatience and intolerance of an ever-youthful social movement. Alone among the movements of the sixties, it has gained steadily in power, prestige and, what is perhaps most important, public appeal.

Popular support apart, the success of the environmental movement is also reflected in the forests and wild areas it has helped set aside, as well as in the laws it has repealed or got enacted, nowhere more effectively than in the United States of America. In this country the pressures of environmentalists, rather than autonomous government action, have created an extensive and for the most part well managed system of national parks. Having protected large chunks of wilderness from the threat of 'development,' the American environmental movement has increasingly turned its attention to controlling the hazardous byproducts of industrialization: air and water pollution, and the production of toxic or radioactive wastes. Here too it has been conspicuously successful, forcing Congress to enact over seventy environmental measures into law. Among these is the National Environment Protection Act of 1969, a comprehensive piece of legislation and the envy of environmentalists in other countries who struggle to enforce minimum standards on their own governments.

2

Part I: Environmentalism's First Wave

While opinion polls consistently show over two-thirds of the public in support of even stricter environmental measures—and willing to part with some hard-earned dollars in the cause—the green agenda is also influencing the outcome of local, state and federal elections. Politicians from both parties assiduously project a green image and cultivate a green constituency. It was a Republican President, George Bush, who famously remarked, 'We are all environmentalists now.' The Democrats, not to be outdone, sent forth as Vice-President the author (Al Gore) of a respectably thorough and best-selling survey of the environmental dilemma, entitled *Earth in the Balance*. As the political scientist Richard Andrews points out, the influence of the environmental movement is 'demonstrable in all levels of government in extraordinary quantities of legislation, regulations and budgetary allocations, as well as in continuing media attention.' Or as John Oakes, an editor at the *New York Times*, writes of the movement's most cherished achievement, 'The national parks are as sacred to most Americans as the flag, motherhood and apple pie.'

Like apple pie, but unlike the flag, national parks are distinctively but not uniquely American. For the beauty and diversity of its resident species and habitats, Serengeti in Tanzania is probably more celebrated than Yellowstone in Wyoming, Manas in eastern India at least as remarkable as Yosemite in California. Indeed, environmentalism is by now a genuinely international movement, occurring with lesser or greater intensity in a variety of countries around the globe. Nor do these national movements necessarily work in isolation. In the age of e-mail and the fax machine, information generated in one country can be instantaneously transmitted to another. Environmentalism has thus come to constitute a field-of-force in which different individuals and organizations, far removed in space, collaborate and sometimes compete in forging a movement that often transcends national boundaries.

II

Moving outwards from the American experience, this book presents a global history of the environmental movement. Its focus is not on the nature and extent of environmental degradation; thus it has little to say about the rates of tropical deforestation, the extinction of species, or the build-up of carbon in the atmosphere. Those facts are properly the preserve of the scientist. Rather, this is a historical account and analysis of the origins and expressions of environmental concern, of how individuals and institutions have perceived, propagated, and acted upon their experience of environmental decay. This

is a book, in sum, of the environment as a spur to human reflection and human action, rather than a scientific study of the state of nature or a balance sheet of the impact of human beings on the earth.

As a program of political reform, articulating concrete policies for states and societies to adopt, environmentalism needs to be distinguished from a more narrow aesthetic or scientific appreciation of the natural world. Classical literary traditions manifest an abiding concern with natural landscapes: in writing of the beauty of birds, animals, rivers and farms, both the Roman poet Virgil (c. 70–1 BC) and the Sanskrit dramatist Kalidasa (c. AD 375–415) would qualify as 'nature-lovers'. Moving on to the late Middle Ages, the exploration by European travellers of Asia and the Americas also kindled a keen interest in the richness and diversity of nature. The exuberance of plant and animal life in the tropics was documented by a whole array of European scientists, of whom the Englishman Charles Darwin (1809–82) is perhaps the best known and most influential.

However, as understood in this book environmentalism goes beyond the literary appreciation of landscapes and the scientific analysis of species. I argue that environmentalism must be viewed as a *social* program, a charter of action which seeks to protect cherished habitats, protest against their degradation, and prescribe less destructive technologies and lifestyles. When then did the environmental movement begin? Most accounts of the American movement date its beginnings to Rachel Carson's book on pesticide pollution, *Silent Spring*, published in 1962 and variously described as the 'bible' and 'founding event' of modern environmentalism. It is true that it is only in the sixties that environmentalism emerges as a popular *movement*, successfully influencing public policy through a mixture of protest in the streets and the lobbying of legislators in the corridors of power. However, an intellectual concern for the protection or conservation of nature goes back at least to the last decades of the eighteenth century. This precocious interest rapidly grew in the nineteenth century, its votaries seeking to influence the modernizing governments of North America and Europe. Without always commanding a mass base, this earlier generation of environmentalists initiated wideranging programs of forest and water conservation and also helped set up the first national parks.

The history of environmentalism in most countries has followed a broadly similar pattern; an early period of pioneering and prophecy, culminating in recent decades in a widespread social movement. We might thus speak of a *first wave* of environmentalism, the initial response to the onset of industrialization, and a *second wave*, when a

largely intellectual response was given shape and force by a groundswell of public support. Environmentalism thus has a rather longer and more distinguished lineage than is sometimes allowed for. In its contemporary forms it is certainly a child of the nineteen sixties, but also, as this book shows, perhaps a grandchild of the eighteen sixties.

The first wave of environmentalism proceeded step-by-step with the Industrial Revolution, itself the most far-reaching process of social change in human history. The industrialization of the world dramatically altered the natural world through new methods of resource extraction, production, and transportation. The scale and intensity at which nature was used (and abused) increased manifold. Simultaneously, advances in medical technology led to a steady increase in human populations. More humans producing more and consuming more led axiomatically to greater pollution and habitat degradation. The pace of environmental destruction greatly accelerated. Nature became a source of cheap raw material as well as a sink for dumping the unwanted residues of economic growth. Open-cast mining and the ever-growing appetite of industry decimated forests and wildlands. New and dangerous chemicals were excreted into rivers and the atmosphere.

The industrialization of Europe led also to major changes in the rural economy. The factories and cities needed materials to process and consume, these demands leading to a transformation of agriculture through the adoption of more capital-intensive, market-oriented methods of production. Pastures and hedgerows and small farms with mixed crops gave way to a more monotonous landscape, of large, continuous holdings dominated by crop monocultures. Further afield, European economic growth also impacted the natural environments of Asia, Africa and North America. Industrialization had an organic connection with imperial expansion, as white colonists took possession of large parts of the globe, re-orienting local economies towards the demands of the metropolis. British ships were built of Burma teak, their sailors wearing clothes of cotton grown in India, drinking Kenyan coffee sweetened with sugar planted in the Caribbean. Decimating the forests of north-eastern United States, southern Africa and the Western Ghats of India—to name only three such regions—the British were, through the eighteenth and nineteenth centuries, unquestionably the world leaders in deforestation. Emulating them in lesser or greater degree were the Dutch, the Portuguese, the French, the Belgians and the Germans, European powers who were to all become prime agents of ecological destruction in their colonies. Environmental *problems* were certainly not unknown in the past,

but possibly for the first time in human history there was now the perception of an environmental *crisis*. This was the perception seized upon by the first wave of environmentalism, which asked whether the great increases in wealth and prosperity brought about by modern industrialization were in fact sustainable. Notably, while the industrial city was the prime generator of ecological degradation, much of the burden of this degradation was felt in the country and the colony. As we shall see in this book, in the vanguard of the first wave of environmentalism were residents of the countryside, such as William Wordsworth, as well as unwilling subjects of colonialism, such as Mohandas Karamchand 'Mahatma' Gandhi.

As a dynamic social response to the Industrial Revolution, environmentalism bears comparison with three other movements of the modern world—democracy, socialism, and feminism. Defined in opposition to absolutism, democracy calls for a greater voice of ordinary citizens in decisions that affect their lives. Defined in opposition to both feudalism and capitalism, socialism calls for a more equitable distribution of wealth and productive resources. Defined in opposition to patriarchy, feminism calls for the granting of greater political and economic rights to women. Meanwhile the environmental movement has expanded human understandings of 'rights' and 'justice', calling for greater attention to the rights of nature as well as for sustainable lifestyles. Its agenda has sometimes been complementary to the agendas of other movements—at other times, in competition with them. These connections, between environmentalism on the one side and democracy, socialism or feminism on the other, shall be made explicit throughout this book.

Like all social movements, the environmental movement has within its fold different individuals, trends, traditions, and ideologies. Just as they are varieties of feminism, there have been varieties of environmentalism as well.

The first part of the book explores three such varieties, each a distinctive response to the emergence and impact of industrial society:

1. We have, first of all, the moral and cultural critique of the Industrial Revolution, here termed *back-to-the-land*. For the great romantic poets like Blake and Wordsworth, the 'dark, satanic mills' of the industrial age threatened to obliterate forever their green and pleasant land, the pastoral idyll of rural and traditional England. Novelists like Charles Dickens and political thinkers like Friedrich Engels wrote critically of the inhuman working and living conditions of the time, the bleak

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- homes and the dark, damp and polluting factories. Others, like the Indian saint-politician Mahatma Gandhi, combined a moral critique with a simple lifestyle, living gently on the earth while deploring the multiplication of wants that modern civilization had brought about.
2. The second strand, that of *scientific conservation*, chose not to turn its back on industrial society, but to work instead on taming its excesses. Based on careful research in the empirical mode, rather than on a purely artistic or affective response, this variety of environmentalism argued that without careful guidance by experts industrialization would rapidly use up resources and pollute the environment. Conservation was the 'gospel of efficiency,' the use of science to manage nature and natural resources efficiently and in the long run. Crucial here is the idea of 'sustained yield,' the belief that human use of fish or forest, water or wildlife, should not dip into the capital stock, restricting itself to the annual increment of the resource in question. By the late nineteenth century, scientific conservation had emerged as a global movement, with foresters taking the lead in establishing resource management agencies run on scientific lines in Asia, Africa, Europe and North America.
 3. The third strand of environmentalism, which combines elements of morality, science, and aesthetics, is what has come to be known as the *wilderness idea*. The industrialization of Europe, and the settlement and spread of European populations in the New World, devastated large areas of forest and wilderness. There arose in response a movement of artists and scientists which aimed to lock up areas still untouched, to keep them free of human disturbance. Sometimes the motivation was the protection from extinction of endangered species like the grizzly bear, at other times the saving of scenic habitats like Yosemite. Although it has its outposts in other corners too, the wilderness movement has flowered most vibrantly in the United States, as discussed in the pages of this book.

Back-to-the-land, *scientific conservation* and the *wilderness idea* constitute three generic modes of environmentalism. Part I of this book defines and documents these modes, tracing their evolution and expressions across the centuries and continents. In Part II we move forward to the second wave of environmentalism, its transformation from intellectual response to mass movement. Here we study

the resurgence of the three distinctive strands in the 1960s and thereafter, and also explore the new dimensions brought to global environmentalism by the fears of a population explosion, the claims and assertions of women, and, especially, the divide between the rich countries of the North and the mostly poor countries of the South. We show how, in one country after another, there has arisen a vibrant and popular social movement dedicated to protecting or replenishing nature. Readers will note that while Part I starts with an examination of British traditions, Part II begins with an analysis of American trends. This choice is in keeping with our emphasis on industrialization as the generator of environmentalism. For the United Kingdom was the home of the original Industrial Revolution, while the United States has led the world in later elaborations of the industrial way of life. One country, consequently, pioneered the first wave of environmentalism; the other country showed the way in the second. Both parts of the book thereby uses an exemplary country as a springboard, to set off the subsequent discussion of environmentalism in other cultures. Our focus is as much on the differences as the similarities, for these 'national' movements have varied widely among themselves with regard to their tactics of protest and their ideas of what constitutes a worthwhile environment for us to nourish and live in.

III

To write a global history of anything, let alone a complex and widespread phenomenon such as environmentalism, is to be savagely selective. Inevitably, some of the more telling illustrations come from the histories of the two countries I am myself most familiar with, India and the United States. But I have tried to cast my net wider, to pick up examples and exemplars from times past and distant places. Where the Indian and American materials come from my own research, I have distilled from other peoples' writings and experiences the history of environmentalism in the countries of Asia and Latin America, as well as of Africa and Europe. Even so, some readers will complain that I have omitted their favourite country, others that I have not honored their favourite environmentalist.

There have been millions of words written on the history of American environmentalism, by historians and journalists, scientists and sociologists—all American. Following their lead, scholars elsewhere have written on the history of environmentalism in their own country. Studies of the United States still dominate the shelf of the library marked 'The Environmental Movement', but these are now being

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rapidly joined by works on the history of German, Swedish, British or Brazilian environmentalism. This book breaks with an established pattern, providing not another national history but a *trans*-national perspective on the environmental debate, by comparing and contrasting historical processes in six continents. By bringing in the experience of other cultures, and juxtaposing it with a fresh reading of environmentalism in the United States, the book hopes to set the American experience more properly in its global context.

A second aim of the book is to document the flow of ideas across cultures, the ways in which the environmental movement in one country has been transformed, invigorated and occasionally distorted by infusions from outside. Let me quickly run through some examples developed at length later. The founder of the United States Forest Service, Gifford Pinchot, honored as his mentor and prime inspiration a German botanist, Dietrich Brandis; it was Brandis who had previously set up the Forest Department in India, perhaps the largest and most influential of natural resource bureaucracies; this debt was returned with interest a century later when the ideas of Mahatma Gandhi were freely borrowed by the German Green Party, the most potent political expression of contemporary environmentalism. Gandhi himself is sometimes regarded as a quintessentially Indian, even Hindu thinker, yet he was deeply influenced by Russian populism (via the novelist, Leo Tolstoy, with whom he had been in correspondence); and by American radical individualism via Henry David Thoreau, whose essay on civil disobedience he regarded as his own political testament; and most significantly by English anti-industrialism via the works of the critic John Ruskin. Or take, finally, the movement of Deep Ecology, the leading edge of the American environmental movement today, which fights for 'biocentric equality,' that is, the placing of humans on par with and not above other species. While most of its adherents are to be found on the west coast of the United States, the ideas of Deep Ecology were first formulated by a Norwegian philosopher, Arné Naess, who once wrote a dissertation on—Gandhi!

The divides this book spans are, however, as much temporal as spatial. In the academy's division of labor, wherein historians study the past and sociologists and anthropologists study the present, earlier works have tended to concentrate on either the first or the second wave of environmentalism, rarely both. By contrast, this book locates the present in the past, showing the influence on contemporary movements of patterns and processes that have persisted over the years, or

gone underground only to resurface once more. In this it draws inspiration from the Stanford poet, Wallace Stegner, who remarks that

The tracing of ideas is a guessing game. We can't tell who first had an idea; we can only tell who first had it influentially, who formulated it in some form, poem or equation or picture, that others could stumble upon with the shock of recognition. The radical ideas that have been changing our attitudes towards our habitat have been around forever.

I would wish only to substitute, for the poet's 'forever', the less evocative but historically more precise phrase, 'at least for a hundred years'.

Back to the Land!

THE ENGLISH LOVE OF THE COUNTRY

In the eighteenth and nineteenth centuries the landscape of England was reshaped by the Industrial Revolution. Coal mines, textile mills, railroads and shipyards were the visible signs of an enormous expansion of industry and trade which made England the foremost economic power in the world. Industrialization was accompanied by rapid urbanization; between 1801 and 1911 the proportion of the British population living in cities increased from 20 per cent to 80 per cent. But the countryside was also being transformed, with a new breed of landowners producing wool, cotton and grain for the urban market. Peasants, shepherds and artisans, who had formed the backbone of the rural economy in medieval times, increasingly joined the ranks of the dispossessed, flocking to the cities in search of employment.

England was the home of industrialization, but also of opposition to it. The anthropologist Alan Macfarlane has captured this paradox well. In the mid-nineteenth century, he writes,

England was the most urbanized country in the world, yet one where the yearning for the countryside and rural values was the most developed. Its strangely anti-urban bias was shown in the prevalence of parks, the ubiquity of flower gardens, the country holiday industry, the dreams of retirement to a honeysuckle cottage and the emphasis on 'nature' and rural values in the Romantic and pre-Raphaelite movements.

This affirmation of country life, in direct opposition to the emerging urban-industrial culture, was perhaps most eloquently expressed in a

rich literary tradition, flowering in some of the finest works in the English language.

An early exemplar of this tradition was William Wordsworth (1770–1850), whose poetry expresses an intimate affinity with the natural world. During his lifetime Wordsworth walked some 175,000 miles through England, and, as the literary historian Jonathan Bate remarks, he taught his readers 'how to walk with nature' too. In his travels Wordsworth saw only 'the darker side of the great change' wrought by the Industrial Revolution: the 'outrage done to nature' by the cities and factories, such that the common people were no longer 'breathing fresh air' or 'treading the green earth.' The poet was profoundly out of sympathy with the morés of city life, with its impersonality and its elevation of money-making above all other values. In the country, and only there, lay 'the secret spirit of humanity,' which, despite war, revolution and economic change,

'mid the calm oblivious tendencies
of nature, 'mid her plants, her weeds and flowers,
And silent overgrowings, still survived.

Underlying Wordsworth's poetry and philosophy was a defense of the organic union with nature of the peasant and shepherd, a way of life that the deadly combination of industrialization and market farming wished to obliterate. Although village folk were illiterate and inarticulate, they were in closer touch with nature than the city dweller. 'And grossly that man errs,' he wrote, 'who should suppose'—

That the green Valleys, and the Streams and Rocks
Were things indifferent to the Shepherd's thoughts.
Fields, where with cheerful spirits he had breath'd
The common air; the hills which he so oft
Had climb'd with vigorous steps; which had impress'd
So many incidents upon his mind
Of hardship, skill or courage, joy or fear;
Which like a book preserv'd the memory
Of the dumb animals, whom he had sav'd,
Had fed or shelter'd . . .
these fields, these hills

Which were his living Being, even more
Than his own Blood—what could they less? had laid
Strong hold on his affections, were to him
A pleasurable feeling of blind love,
The pleasure which is there in life itself.

This is from a poem about the shepherds of the Lake District, the

region with which Wordsworth is most closely identified. He even wrote a guide to the people and scenery of the Lakes: a book now forgotten, but a bestseller in its day, which earned him more money than his most celebrated poems. Indeed, in the last years of his life Wordsworth was moved to begin a public campaign against the extension of the railway to the Lake District, a development he feared would disrupt the beauty and integrity of the region.

Wordsworth's book on his favorite place was published in various editions, under various titles. The 1842 version had an expansive title, redolent of the nineteenth century: it was published as *A Complete Guide to the Lakes, Comprising Minute Directions for the Tourist, with Mr Wordsworth's Description of the Scenery of the Country, etc. And Three Letters on the Geology of the Lake District, by the Rev. Professor Sedgwick, Edited by the Publisher*. By any name it was rather more than a brochure, and little less than a summation of the poet's natural credo. In his book *Romantic Ecology*, Jonathan Bate nicely places Wordsworth in the context of his own time and ours. The values of the Guide, he says, were

the maintaining of the place for the benefit of the whole nation; the conception of landscape beauty, with a particular emphasis on wild (sublime) country; the belief in the importance of the open air; the respect for buildings that have a history in the place; and the recognition that traditional agricultural practices are integral to the identity of the place. Wordsworth would have been pleased that shepherds still work on the hills of Westmorland and Cumberland, since, in contrast to the American model, the English and Welsh National Parks do not consist of enclosed areas owned by the government; the land in them remains privately owned . . . Conservation is sought by means of planning rather than possession.

One of Wordsworth's junior contemporaries was John Clare (1793–1864), a poet from farming stock. Clare's best-known verses deal with the impact of the enclosure, by rich landowners, of village common land to raise crops for the urban market. Enclosure threw the rural poor out of work and destroyed the diversity of life-forms that had long been a feature of the English landscape. Clare's poem *The Village Minstrel* speaks of how—

There once were lanes in nature's freedom dropt,
There once were paths that every valley wound—
Inclosure came, and every path was stopt;
Each tyrant fix'd his sign where paths were found,
To hint a tresspass now who cross'd the ground:

Justice is made to speak as they command;
The high road must now be each stinted bound:
—Inclosure, thou'rt a curse upon the land,
And tasteless was the wretch who thy existence plann'd . . .
. . . Ye fields, ye scenes so dear to Lubin's eye,
Ye meadow-blooms, ye pasture-flowers, farewell!
Ye banish'd trees, ye make me deeply sigh,
Inclosure came, and all your glories fell.

Next in the English tradition of romantic environmentalists lies John Ruskin (1819–1900), artist, art critic, sometime Professor of Poetry at the University of Oxford. Ruskin thought modern towns 'little more than laboratories for the distillation into heaven of venomous smokes and smells, mixed with effluvia from decaying animal matter, and infectious miasmata from purulent disease.' The air was foul, and the water too, for every river in England had been turned 'into a common sewer, so that you cannot so much as baptize an English baby but with filth, unless you hold its face out in the rain, and even that falls dirty.' This destruction, he thought, owed itself to the fact that modern man had *desacralized* nature, viewing it only as a source of raw materials to be exploited, and thus emptying it of the mystery, the wonder, indeed the divinity with which pre-modern man saw the natural world. Observe the contrast at work through Ruskin's luminous prose:

Whereas the mediaeval never painted a cloud, but with the purpose of placing an angel in it; and a Greek never entered a wood without expecting to meet a god in it; we should think the appearance of an angel in the cloud wholly unnatural, and should be seriously surprised by meeting a god anywhere. Our chief ideas about the wood are connected with poaching. We have no belief that the clouds contain more than so many inches of rain or hail, and from our ponds and ditches expect nothing more divine than ducks and watercresses.

Unlike Wordsworth, Ruskin focused closely on the physical consequences of the industrialization of England: the befouling of the air and of the waters, as well as the impact of this pollution on human health and the landscape. But the influence of the poet on his work is manifest, never more so when, in 1876, he launched a fresh campaign (see *box*) to prevent the extension of the railroad into the Lake District. Ruskin believed that the trains, and the hordes of tourists they might bring, would destroy the District. As with Wordsworth, Ruskin's love of the land was inseparable from his love of the rustic who dwelled in it. In opposing the railways he wished as much to protect

RUSKIN OPPOSES THE RAILWAYS,
DEFENDS THE LAKES

In John Ruskin the passion of the environmentalist fused with the eloquence of a great prose stylist.

When the frenzy of avarice is daily drowning our sailors, suffocating our miners, poisoning our children, and blasting the cultivable surface of England into a treeless waste of ashes, what does it really matter whether a flock of sheep, more or less, be driven from the slopes of Helvellyn, or the little pool of Thirlmere filled with shale, or a few wild blossoms of St. John's vale lost to the coronal of English spring? Little to any one; and—let me say this, at least, in the outset of all saying—*nothing to me.* No one need charge me with selfishness in any word or action for defence of these mossy hills. I do not move, with such small activity as I have yet shown in the business, because I live at Coniston (where no sound of the iron wheels by Dunmail Raise can reach me), nor because I can find no other place to remember Wordsworth by than the daffodil margin of his little Rydal marsh. What thoughts and work are yet before me, such as he taught, must be independent of any narrow associations. All my own dear mountain grounds and treasure-cities, Chamouni, Interlachen, Lucerne, Geneva, Venice, are long ago destroyed by the European population; and now, for my own part, I don't care what more they do; they may drain Loch Katrine, drink Loch Lomond, and blow all Wales and Cumberland into a heap of slate shingle; the world is wide enough yet to find me some refuge during the days appointed for me to stay in. But it is no less my duty, in the cause of those to whom the sweet landscapes of England are yet precious, and to whom they may yet teach what they taught me, in early boyhood, and would still if I had not to learn,—it is my duty to plead with what earnestness I may, that these sacred sibylline books may be redeemed from perishing.

... I have said I take no selfish interest in this resistance to the railroad. But I do take an unselfish one. It is precisely because I passionately wish to improve the minds of the populace, and because I am spending my own mind, strength, and fortune, wholly on that object, that I don't want to let them see Hellvellyn while they are drunk. I suppose few men now living have so earnestly felt—none certainly have so earnestly declared—that the beauty of nature is the blessedest and most necessary of lessons for men; and that all other efforts in education are futile till you have taught your people to love fields, birds, and flowers. Come then, my benevolent friends, join with me in that teaching.

Source: 'The Extension of Railways in the Lake District' (1876), in *The Works of John Ruskin, Volume XXXIV*, edited by E. T. Cook and Alexander Wedderburn (London: George Allen, 1908), pp. 137–8, 142.

nature as the moral fibre of the villagers 'whose strength and virtue yet survive to represent the body and soul of England before her days of mechanical decrepitude and commercial dishonour.'

His writings apart, Ruskin also worked to build institutions which would recapture the flavor of a world rapidly being lost. He set up a guild, named for St. George, that ran farms and craft shops which stressed self-sufficiency and simplicity, producing food and weaving cloth for their own use. The revival of handicrafts was also vigorously promoted by his disciple William Morris (1834–96), likewise a man mostly out of step with his times, a man who—as the writer Jan Marsh points out—'wished as far as possible to live in the fourteenth rather than the nineteenth century.'

Poet, prophet, designer, architect and socialist, William Morris lived a life of many parts; he has since been claimed as an ancestor by numerous artistic and political movements. But the environmental movement has as good a claim as any. A native Londoner, Morris deplored the city's growth, its 'swallowing up with its loathsomeness field and wood and heath without mercy and without hope, mocking our feeble attempts to deal even with its minor evils of smoke-laden sky and befouled river.' Morris wished to turn England 'from the grimy backyard of a workshop into a garden,' from which factories would disappear, with town and country resuming a relation of harmony and mutual benefit. His long narrative poem 'The Earthly Paradise' begins by asking the reader to—

Forget six counties overhung with smoke,
Forget the snorting steam and piston stroke,
Forget the spreading of the hideous town;
Think rather of the pack-horse on the down,
And dream of London, small, and white, and clean,
The clear Thames bordered by its gardens green . . .

We move on, finally, to Edward Carpenter (1844–1929), an associate of Morris with whom the English back-to-the-land movement finally turned international. Trained as a mathematician, ordained as a priest, Carpenter resigned holy orders and a prestigious Cambridge fellowship to move back to the land. With some friends he set up a commune on a hill above the factory town of Sheffield, offering a union of manual labor and clean air as an alternative to industrial civilization. In this he was influenced by Morris, but also by the Americans Walt Whitman and Henry David Thoreau, whose message of the simple life he enthusiastically embraced. The commune grew its own food and vegetables and baked its own bread; its members, who

included men from working class backgrounds, discarded most of their clothing as superfluous. Their farm has been described as 'a true Arcadia; three fields running down to a brook, a wooded valley below and the moors above.' The contrast with Sheffield could be sharply etched, and looking down on the town in May 1889, Carpenter saw—

only a vast dense cloud, so thick that I wondered how any human being could support life in it, that went up to heaven like the smoke from a great altar. An altar, indeed, it seemed to me, wherein thousands of lives were being yearly sacrificed. Beside me on the hills the sun was shining, the larks were singing; but down there a hundred thousand grown people, let alone children, were struggling for a little sun and air, toiling, moiling, living a life of suffocation, dying (as the sanitary reports only too clearly show) of diseases caused by foul air and want of light—all for what? To make a few people rich!

The writings of Wordsworth, Ruskin, Morris and Carpenter helped inspire the establishment of an array of environmental societies in the late nineteenth century. These included the Commons Preservation Society, begun in 1865 to prevent the encroachment of cities on woodland and heath used by communities for recreation; the Society for the Protection of Ancient Buildings, founded by William Morris himself in 1877; the Lake District Defence Society, stoutly in the Wordsworth-Ruskin lineage, which was formed in 1883; the Selborne League, created in 1885 for the protection of rare birds, beautiful plants, and threatened landscapes, and named for the great eighteenth-century naturalist Gilbert White of Selbourne; and the Coal Smoke Abatement Society, influenced by Edward Carpenter's writings, and started in 1898 as an independent pressure group to make the government enforce pollution control laws on errant factories. Preceding all of these was the Scottish Rights of Way Society, formed in 1843 to protect walking areas around the city of Edinburgh.

One of the most influential of these societies has been the National Trust, which was created in 1895. A prime mover behind the setting up of the Trust was Octavia Hill (1838–1912), quite possibly the first woman environmentalist of significance. A friend of Ruskin, Hill, like her compatriots, coupled environmental protection with social reform and was a pioneer in establishing clean and congenial dwellings for the urban poor. She was active in many environmental campaigns: she organized the first anti-smoke exhibition in London and, as a member of the Commons Preservation Society, helped protect numerous areas of the city from encroachment or deterioration. As the *Dictionary of National Biography* notes, 'it was largely due to

her efforts that Parliament Hill and many other large and small open spaces were secured for public use and enjoyment.' Octavia Hill also helped define the objectives of the National Trust, which were outlined in its first annual report:

to promote the permanent preservation, for the benefit of the Nation, of land and tenements (including buildings) of beauty or historic interest; and as regards lands, to preserve (so far as practicable) their natural aspects, features, and animal and plant life; and for this purpose to accept from private owners of property, gifts and places of interest or beauty, and to hold the lands, houses and other property thus acquired, in trust for the use and enjoyment of the nation.

These aims are much broader than the protection of old buildings and stately homes, the activities for which the National Trust is now chiefly known. At the same time, they were much narrower than the aims of John Ruskin or Edward Carpenter, which were to turn the clock back, to restore England as a country of cozy villages and manageable small towns nestling within a landscape of pretty pastures, luxuriant oak forests, and clean swift-flowing rivers. Indeed, throughout history visionary aims have served as the source of more modest or, one might say, *piecemeal* reform. By setting aside forests and wetlands, or preserving historic buildings and parks, the environmental societies begun in the late nineteenth century have saved at least some parts of England from the contaminating effects of urban-industrial civilization. This represents the tangible fruits of the back-to-the-land movement, the putting into practice, albeit in a limited way, of the ideas and aspirations of Ruskin and company. The international influence of these English visionaries will be explored later in the chapter. But we must first take a small detour.

A DETOUR: WERE THE NAZIS GREEN, AND ARE GREENS NAZIS?

By the late nineteenth century, Germany had surpassed England as the front-runner in technological and industrial development. Here too, poets and writers were in the vanguard of the movement to keep their land rural and their forests virgin, uncontaminated by the greed of the cities and the excrement of their factories. Consider these lines from a poem published in 1901 by Rainer Maria Rilke:

Everything will again be great and mighty,
The land simple and the water bountiful,
The trees gigantic and the walls very small.
And in the valleys strong and multiformed,
A nation of shepherds and peasant farmers.

A nation of peasants and shepherds, not of factory workers and entrepreneurs, which was in fact what Germany was fast becoming. In the Rilkean vision peasants were celebrated as the backbone of the nation, but the forests were more important still, as the repository of German culture, the inspiration for its poets, musicians, and artists. The self-proclaimed sociologist 'of field and forest,' William Heinrich Reill, wrote in 1861 that the woods 'were the heartland of [German] folk culture . . . so that a village without a forest is like a town without any historical buildings, theater or art galleries. Forests are games fields for the young, feasting-places for the old.' But by making the peasant into a market-driven farmer, and by destroying forests or converting them into timber plantations, industrialization was undermining the very basis of 'German-ness.' In the German romantic tradition environmentalism was united with patriotism, such that peasants, forests and the nation came to constitute an organic whole. 'The German people need the forest like man needs wine,' wrote a nineteenth-century theologian, adding: 'We must preserve the forest, not simply so that the oven does not grow cold in winter but also in order that the pulse of the national life continues to beat warm and happy [in order that] Germany remains German.'

Of course, in England as much as in Germany, rural romantics were in a distinct minority. The dominant industrial culture of the two countries met in the First World War, a conflict which first revealed the awesome destructive power of modern technology. To some observers the costs of war—some ten million dead—were the consequence wholly of industrialization and capitalist development, through the hunger for territory and the forces of avarice that they had unleashed. Indeed no sooner had the conflict ended than there occurred a revival of the agrarian ideal throughout Europe. This took various forms: the establishment of a Council for the Protection of Rural England in 1928; the growth of agrarian parties in Eastern Europe to defend the peasant from exploitation by the city dweller; and the spread of ruralist ideas in Scandinavia through the work of the novelist Knut Hamsun, who spent his Nobel Prize money on restoring an old farm.

In Germany the reassertion of peasant environmentalism in the 1920s was accompanied by the rise of the National Socialists. There was unquestionably, at times, a congruence between the views of environmentalists and Nazis. Some Nazi thinkers also emphasized a mystic unity between the peasant, the forest, and the national spirit. Others railed against the growth of the cities. The party's newspaper worried in 1932 that 'the influence of the metropolis has grown

overwhelmingly strong. Its asphalt culture is destroying peasant thinking, the rural lifestyle, and [national] strength.' Leading Nazis were prominent in environmental causes. The Minister for Agriculture, Walter Darré, was an enthusiast for organic farming. Herman Goering, second only to Adolf Hitler in the party hierarchy, strongly supported nature protection, appointing himself Master of the German Hunt as well as Master of the German Forests.

The apparent affinity between Nazism and green ideology has led some commentators to claim that environmentalism is conducive to authoritarian thinking. When the German Green Party was formed in the 1970s (a development explored in Chapter Five), some of its opponents darkly suggested that the National Socialists were the first 'Green party.' The historian Raymond Dominick, after a careful study of the subject, points out, however, that 'although several substantial areas of agreement drew National Socialism together, to cross over into the Nazi camp a conservationist had to accept blatant racism.' In the Nazi slogan of 'Blut und Boden' (Blood and Soil) many environmentalists identified only with the latter part. Moreover, in practice the Nazis built an industrial economy—in part to ready themselves for war—that was totally at odds with the peasant ideology they sometimes claimed to uphold. The journalist Sebastian Haffner, who was forced into exile by Hitler's regime, wrote in 1944 that as 'soon as the Nazis took over in Germany they began feverishly to build. First came technical construction work, motor roads, aerodromes, armanent factories, fortifications:' scarcely the agenda of environmentalists. As one of their leading architects, with a sheaf of commissions in hand, put it, the Nazis wished to give 'permanent evidence in concrete and marble of the greatness of our time.' They also vigorously promoted consumerism; Hitler once promised every German citizen a Volkswagen car and built in anticipation highways to drive them on. In the wry judgement of the Spanish scholar Juan Martinez Alier, the reality of Nazi rule was not *Blut und Boden* but rather *Blut und Autobahnen*.

Some Nazis were indeed Green, but most were not. In any event, to be Green—then or now—is not connected with being Nazi.

THE GANDHIAN VIEW OF THE SIMPLE LIFE

In 1889 Edward Carpenter published *Civilization: Its Cause and Cure*, a book which has been termed a 'kind of text for the back-to-the-land movement.' One of its early and admiring readers was a twenty-year-old Indian who had recently arrived to study law in London.

The Indian did not know Carpenter, but soon became intimate with his disciple Henry Salt, a pacifist and animal rights activist who likewise preached a return to nature and praised the simplicity of rural life. It was in Salt's *Journal of the Vegetarian Society* that the young man published his first writings, the beginnings of an oeuvre that came to comprise ninety closely printed volumes.

The Indian was Mohandas Karamchand Gandhi, a political and spiritual leader of consummate skill and considerable achievement, regarded by the *International Herald Tribune*, and by countless other organizations and individuals, as the greatest person of the twentieth century. Mahatma Gandhi is celebrated as a doughty opponent of racism in South Africa, where he lived, and struggled, for over twenty years; as an Indian freedom fighter whose opposition to British rule helped inspire numerous anti-colonial movements in Asia and Africa; and as the perfecter of a technique of non-violent protest that has since been used in a variety of contexts, from the civil rights movement in the United States to Solidarity in Poland. All this notwithstanding, he was also an early environmentalist who anticipated the damaging effects on nature of the industrial economy and the consumer society.

In his autobiography, Gandhi recalled that of the books he read in his youth, 'the one which brought about an instantaneous and practical transformation in my life was [John Ruskin's] *Unto This Last*.' John Ruskin and Edward Carpenter are both acknowledged in Gandhi's first book, *Hind Swaraj* (Indian Home Rule), published in 1909. In this work Gandhi decisively rejects industrialization as an option for India, then a colony struggling to free itself from British rule. For industrial society, as Gandhi had observed it in the West—in person and through the writings of Ruskin and company—was selfish, competitive, and grossly destructive of nature. He thought that 'the distinguishing characteristic of modern civilization is an indefinite multiplication of wants,' to satisfy which one had to forage far and wide for raw materials and commodities. Gandhi believed that by contrast preindustrial civilizations were marked by an 'imperative restriction upon, and a strict regulating of, these wants.' In uncharacteristically intemperate tones, he spoke of 'wholeheartedly detest[ing] this mad desire to destroy distance and time, to increase animal appetites, and go to the ends of the earth in search of their satisfaction. If modern civilization stands for all this, and I have understood it to do so, I call it satanic.'

Gandhi offered, as an alternative, a code of voluntary simplicity that minimized wants and recycled resources—his own letters were



Mahatma Gandhi, at his spinning wheel, circa 1946.

SOURCE Unidentified Photographer.

written on the back of used paper. One of Gandhi's best known aphorisms is: 'The world has enough for everybody's need, but not enough for one person's greed,' an exquisitely phrased one-line environmental ethic. It was an ethic he himself practised; when he died in January 1948 this man, whose followers were reckoned in the tens of millions, and who helped bring down one of the most powerful empires in history, had possessions that could fit in a small box: two or three changes of clothes, a clock, a pair of spectacles, and a few other odds and ends.

Gandhi's broader vision for a free India was a rural one. He worked for the renewal of its villages, in defiance of the worldwide trend towards industrialization and urbanization. The reasons for this were moral as well as ecological—namely, that there were natural limits to the industrialization of the whole world, as distinct to the industrialization of one country. As he wrote in December 1928: 'God forbid that India should ever take to industrialization after the manner of the West. The economic imperialism of a single tiny island kingdom [England] is today keeping the world in chains. If an entire nation of 300 million [India's population at the time] took to similar economic exploitation, it would strip the world bare like locusts.'

For Gandhi, as for Ruskin and Morris, the growth of cities and factories was possible only through a one-sided exploitation of the countryside. 'The blood of the villages,' he wrote in July 1946, 'is the cement with which the edifice of the cities is built.' He himself wished to see that 'the blood that is today inflating the arteries of the cities runs once again in the blood vessels of the villages.'

Gandhi also opposed the industrialization of agriculture, that is, the replacement of the plough by the tractor and the spread of chemical fertilizers, measures which undeniably increased productivity in the short term but which created unemployment and depleted the soil of its nutrients. He warned that 'trading in soil fertility for the sake of quick returns would prove to be a disastrous, short-sighted policy.' He promoted instead the use of organic manure, which enriched the soil, improved village hygiene through the effective disposal of waste, and saved valuable foreign exchange. But the revitalization of the rural economy also depended on the revival of craft industry (see *box* for his vision of village renewal). India's once vibrant traditions of weaving and other handicrafts had been largely destroyed under British rule, and to restore them Gandhi created two organizations: an All India Village Industries Association and an All India Spinners' Association.

These organizations were run by one of Gandhi's close followers, J. C. Kumarappa, an economist to whom he entrusted the work

of village reconstruction. Kumarappa had studied accountancy in London and economics at Columbia University in New York, before joining the Indian nationalist movement in the 1920s. Working with Gandhi, Kumarappa explored the relation between peasant agriculture and the natural world. For Indian peasants the cultivation of the soil was made possible only by the flow of nutrients from outside: water from ponds and rivers, and manure from cattle dung and from the forest. This meant that the careful management of common property resources, such as irrigation tanks and grazing grounds, was as important to agricultural production as the management of privately owned plots of farmland. There had once existed vigorous village-level institutions for this purpose, which had decayed under British rule. Water and pasture were gifts of nature that were central to peasant farming in India: and in Kumarappa's view, the revival of collective institutions for their management was an important task for economic policy in free India.

AN IDEAL VILLAGE

Gandhi's prosaic, down-to-earth description of his ideal Indian village, offered in January 1937.

It will have cottages with sufficient light and ventilation, built of a material obtainable within a radius of five miles of it. The cottages will have courtyards enabling householders to plant vegetables for domestic use and to house their cattle. The village lanes and streets will be free of all avoidable dust. It will have wells according to its needs and accessible to all. It will have houses of worship for all, also a common meeting place, a village common for grazing its cattle, a co-operative dairy, primary and secondary schools in which industrial [i.e. vocational] education will be the central fact, and it will have Panchayats [village councils] for settling disputes. It will produce its own grains, vegetables and fruit, and its own Khadi [hand-spun cotton]. This is roughly my idea of a model village . . .

Source: *Collected Works of Mahatma Gandhi, Volume LXIV* (New Delhi: Publications Division, 1976), p. 217.

Like his master, Kumarappa believed that an 'economy of permanence' could be founded only on agriculture. 'There can be no industrialization without predation,' he observed, whereas agriculture is, and ought to be, 'the greatest among occupations,' in which 'man attempts to control nature and his own environment in such a way as to produce the best results.' This contrast could be expressed in terms of their relative impact on the natural world. Thus—

in the case of an agricultural civilization, the system ordained by nature is not interfered with to any great extent. If there is a variation at all, it follows a natural mutation. The agriculturist only aids nature or intensifies in a short time what takes place in nature in a long period . . .

Under the economic system of [industrial society] . . . we find that variations from nature are very violent in that a large supply of goods is produced irrespective of demand, and then a demand is artificially created for goods by means of clever advertisements.

Comparing the philosophies of Ruskin and Gandhi, the eminent Indian economist M. L. Dantwala has remarked that for both thinkers 'industrialization was the culprit which destroyed their idyll of a peaceful self-sufficient rural society, in which workers bought their own raw materials, spun and wove them and sold their finished goods to the rural community.' The Gandhian version of the simple life did indeed follow the English model in several respects: in its focus on manual labor, in its elevation of the village as the supreme form of human society, in its corresponding rejection of industrial culture as violent, competitive and destructive of nature and thus unsustainable in the long run. To quote Dantwala once more, the work of Gandhi and Ruskin is best understood as 'a reaction to the egregious excesses of adolescent industrialization.' Nonetheless, the Indian tradition is to be distinguished from the English in at least two respects. First, the Gandhian vision was a severely practical one, ridding itself of the lyric romanticism of Wordsworth and company. Gandhi had little time for art or poetry or music; his concerns were resolutely focused on the economic and the political, the restoring of the livelihoods and dignity of villagers subjugated by the cities and by British colonial rule. Second, in the England of the nineteenth century peasants and craftsmen had been more or less extinguished by the Industrial Revolution; going back-to-the-land was in this sense an act of defiance, quite out of step with the dominant ethos. It might, through pressure groups and environmental societies, moderate the progress of industrialization, but it could scarcely hope to halt it. By contrast, while Gandhi and Kumarappa worked and wrote India was a land of 700,000 villages whose traditional methods of farming, pastoralism and craft production still had a fair chance of withstanding competition from factory-made products. The agrarian ideal for Ruskin was just that—an ideal; whereas for Gandhi it might just conceivably have formed the basis for social renewal in a free India.

The Ideology of Scientific Conservation

CONSERVATION INTERNATIONALISM

In May 1864 the well-known New York firm of Charles Scribners published a volume called *Man and Nature: Or, Physical Geography as Modified by Human Action*. The book was based on years of careful study and reflection, but the author, a Vermont scholar and diplomat named George Perkins Marsh, expected it to have little impact. So doubtful was Marsh of the book's sales that he donated the copyright to the United States Sanitary Commission. Thoughtful friends purchased the copyright and gave it back to the author; a prudent move, for, contrary to Marsh's expectations, *Man and Nature* was to achieve canonical status as the book that sparked the first wave of American environmentalism. As the historian and critic Lewis Mumford once remarked, Marsh's opus was the 'fountainhead of the conservation movement,' a 'comprehensive ecological study before the very word ecology had been invented.'

In the same year as Marsh's book first appeared, a German botanist employed by the government of British India was invited to head a newly created, countrywide, Forest Service. This man, Dietrich Brandis, knew and corresponded with Marsh; he shared with the American a concern with the pace of deforestation and an abiding faith in the powers of scientific expertise to reverse it. The Indian Forest

Department, which Brandis headed for close on two decades, has been one of the most influential institutions in the history of conservation. Established in 1864, by the turn of the century it came to control a little over a fifth of India's land area. It was by far the biggest landlord in a very large country, a status it continues to enjoy to this day.

Although separated by some 10,000 miles, the American publication of *Man and Nature* and the formation of the Indian Forest Department should be viewed as part of the same historical process. From the late eighteenth century, Western scientists had begun exploring the links between deforestation, desiccation, and drought. The rapid clearance of forests, due to agricultural colonization and industrial development, contributed to accelerated soil erosion, and even, some scientists argued, to a decline in rainfall. In North America as well as in the Continent, the growth of human populations and the expansion of trade and industry led to a crisis in the availability of wood products and a steep rise in their price. In Africa and Asia too, the dynamic forces unleashed by European colonialism led to massive environmental degradation, as rainforests in the hills were converted to tea plantations and pastures in the plains replaced by commercial crops such as cotton and sugarcane.

A pioneering analyst of global deforestation was the German scientist and explorer Alexander von Humboldt (1769–1859). From a study of the fluctuating levels of a Venezuelan lake he drew these general conclusions:

The changes which the destruction of forests, the clearing of plants and the cultivation of indigo have produced within half a century in the quantity of water flowing in on the one hand, and on the other the evaporation of the soil and the dryness of the atmosphere, present causes sufficiently powerful to explain the successive diminution of the lake of Valencia . . . By felling the trees that cover the tops and sides of mountains, men in every climate prepare at once two calamities for future generations, the want of fuel and the scarcity of water. . . . When forests are destroyed, as they are everywhere in America by the European planters, with an improvident precipitation, the springs are entirely dried up, or become less abundant. The beds of rivers, remaining dry during a part of the year, are converted into torrents, whenever great rain falls on the heights. The sward and the moss disappearing with the brushwoods from the sides of the mountains, the waters falling in rain are no longer impeded in their course, and instead of slowly augmenting the level of the rivers by progressive filtrations, they furrow during heavy showers the sides of the hills, beat down the loosened soil and

form these sudden inundations that devastate the country. Hence it results that the destruction of forests, the want of permanent springs and the existence of torrents are three phenomena closely connected together. Countries that are situated in opposite hemispheres, Lombardy bordered by the chain of the Alps and Lower Peru inclosed between the Pacific Ocean and the Cordillera of the Andes, exhibit striking proofs of the justness of this assertion.

The British historian Richard Grove correctly observes that these observations of 1819 'have not been superseded by more recent findings'. But Humboldt was, as Grove further reminds us, but the most sophisticated among a group of like-minded conservationists. In both metropolis and colony, the process of habitat destruction was viewed with horror by these conservation-minded scientists. Where private greed—notably, the pioneer's plow and the lumberman's axe—had contributed to deforestation, scientists believed that prompt intervention in the form of public ownership of forests and other natural resources might arrest environmental decline and provide a basis for steady economic growth. Crucial here was the idea of *sustained yield*, based on the belief that scientists could accurately estimate the annual increment of renewable natural resources like wood and water, fish and wildlife. Scientists prescribed that utilization stayed within this increment, thus maintaining nature's capital and ensuring a yield capable of being 'sustained' in the long term.

George Perkins Marsh in North America, and Dietrich Brandis in South Asia, were in the vanguard of what was to emerge as a scientific movement of truly global consequence. By the middle of the nineteenth century, the centralization of political authority and the formation of nation-states allowed experts to intervene more broadly, on a national scale, in the planning and management of natural resources. It began to make sense to speak of 'national forests,' or of 'rivers as the property of the nation,' where previously these resources were recognized largely as being locally owned and controlled, by villages, tribes, or municipalities. The growing prestige of science, and its ever closer alliance with the state, helped foresters and irrigation engineers, soil conservationists as well as wildlife managers, build numerous institutions based on sustained-yield principles in different parts of the world. Some of the more extensive and powerful of these institutions were to be found in the European colonies of Asia and Africa, where authoritarian state systems allowed for the exercise of scientific conservation unconstrained by parliaments, a free press, or the practice of democracy more generally.

To locate scientific conservation in its international context, let us consider the following developments, all of which occurred ten years either side of the publication of G. P. Marsh's *Man and Nature*. In 1859, a Forest and Herbiage Protection Act was passed by the Government of the Cape Colony of Southern Africa, allowing the state to intervene and take over areas of veld and forest threatened with destruction. The next year, 1860, the governor-general of colonial Java formed a committee to plan forest legislation for the island, the epicenter of the Netherlands' overseas empire. Laws protecting Java's forests and affirming state control over them were passed in 1865, also the year of the first Indian Forest Act. Already in 1862, the French had promulgated the first of a series of ordinances designed to create forest reserves in their colonies in Cochinchina (present-day Vietnam). Further east, the 1870s witnessed a flurry of forest-related activities in the British colony of Australia. Thus the province of Victoria appointed a Royal Forestry Commission in 1871, while South Australia passed a Forest Tree Act two years later. Australian forest enthusiasts frequently used Marsh's findings as supporting evidence (see box); meanwhile, at the other end of the world, *Man and Nature* was acquiring belated attention at home. The book stimulated the American Association for the Advancement of Science to submit a petition to Congress in 1873, urging the establishment of a national forestry system and the creation of forest reserves.

As these examples illustrate, foresters were unquestionably in the lead of a scientific movement that also counted, among its constituents, votaries of sustained-yield soil, water, wildlife and fisheries management. This movement was held together by a set of beliefs that was remarkably invariant across the continents and across the different sectors in which it was applied. In the phrase of the South African scholar William Beinart, scientific conservation was an ideology of 'doom and resurrection,' predicting that agricultural and industrial expansion would destroy the environment unless replaced, forthwith, by more rational and far-seeing forms of resource use. Here the conservationist singled out the pioneer farmer for special attention, or, should one say, special condemnation. Thus, one colonial soil scientist remarked in 1908 on the tendency of European settlers in African colonies to 'scoop out the richest and most beautiful valleys, leaving them dry and barren.' Or, as a Scottish forester working in the same continent put it: 'Is it not the case that the history of civilized man in his colonisation of new countries has been in every age substantially this—he has found the country a wilderness; he has cut down trees, and he has left it a desert.' Again, the head of the

United States Soil Conservation Service wrote in 1935 that 'the ultimate consequence of unchecked soil erosion when it sweeps over whole countries as it is doing today must be national extinction.'

SCIENTIFIC CONSERVATION IN AUSTRALIA

A year after the publication of George Perkins Marsh's Man and Nature, a Melbourne newspaper reprised the book's message for its own readers. Note the global reach of the discussion, the cautionary tales as well as the positive lessons gleaned from the experience of other lands.

Over and over again we have urged that steps should be taken to protect our forest lands, not only because extravagance will lead to scarcity, but also because the local climate will be affected in all those places where the forests are removed. In protecting the forests we do more than increase the growth of timber—we prevent waste of soil, we conserve the natural streams, it is not improbable that we prevent decrease in the rainfall, and it is certain that we largely affect the distribution of storm waters. A covering of shrubs and grasses protects the loose soil from being carried away by floods . . . The Italian hydrographers have made mention very often of the disastrous results attendant on destruction of forests—Frisi relates that when the natural woods were removed from the declivities of the Upper Val d'Arno, in Tuscany, the soil of the hills was washed down to the Arno in vast quantities, to the great injury of the riparian proprietors. Some districts of Catalonia have suffered even more by the incautious operations of man; and, on the other hand, we know by what has been done in Italy, in France, in Germany and in Algeria, how much the local climate may be ameliorated, and the fruitfulness of gardens and fields increased by judicious planting.

. . . The reservation of large tracts of forests is our first duty. By keeping the hills clothed we may make fruitful the valleys, and provide stores of moisture for the parched plains. . . Carefully managed, we have much wealth in our forests. The miner, the agriculturalist, and the housebuilder, notwithstanding that their demands are large, can be fully supplied if extravagance be checked and waste be prevented. As the old trees are removed others should be planted. We may with advantage take a lesson from Mehemet Ali and Ibrahim Pacha, who planted more than 20 million of trees in Egypt . . . The conservation of the forest lands, and the extension and improvement of them, concern alike the landholder and the miner, and should occupy the attention of everyone who has leisure and means to become a co-worker with nature.

Source: *The Argus*, Melbourne, 16 October 1865, quoted in J. M. Powell, *Environmental Management in Australia, 1788–1914* (Melbourne: Oxford University Press, 1976), pp. 61–2.

Strikingly, this hostility extended to indigenous forms of land use, that is, to the varieties of pastoralism and cultivation practised by African and Asian communities in territories recently colonized by Europeans. Pastoralists were accused of over-stocking and careless grazing practices, peasants of short-sightedness in their use of water and timber, but particular opprobrium was reserved for swidden or shifting agriculturists. Swidden farmers worked forest areas in rotation, burning and felling a patch of woodland before cultivating the soil for a few years, then moving on to the next patch: returning to the area originally felled once it had been fully reclaimed by forests, to start afresh this rotational cycle of fire, cultivation and fallowing. Although it had been successfully practised for generations, and sustained the economy of hill communities across large parts of Africa and Asia, to the European eye swidden cultivation epitomized indolence, instability and especially wastefulness, intensifying soil erosion and destroying forest areas that could perhaps be put to better use. Representative here are these remarks, dating from the 1860s, of a British forest officer on the Baigas of central India, a tribe that lived in valuable forests that the newly established Forest Department wished to take over. The officer wrote of this community of swidden farmers that they were 'the most terrible enemy to the forests we have anywhere in the hills.' It was sad 'to see the havoc that has been made among the forests by the Baiga axes.' In some areas 'the hills have been swept clean of forests for miles; in others, the Baiga marks are tall, blackened, charred stems standing in hundreds among the green forests'—it was 'really difficult to believe that so few people could sweep the face of the earth so clear of timber as they have done.'

However, scientific conservation was an ideology that was at once apocalyptic and redemptive. It did not hark back to an imagined past, but looked to reshape the present with the aid of reason and science. For rational planning would ensure that the 'great error' of waste—whether caused by settlers, native farmers, or industrialists—could be done away with, and a more efficient and sustainable system put in place. This could only be brought about by the state, the one body capable of taking a long-term view. For the profit motive was incompatible with conservation; with both individuals and enterprises being notoriously short-sighted, the state had to assume the responsibility for managing resources such as forests and water. Individuals and corporations came and went but the government, wrote the founder of the United States Forest Service, Gifford Pinchot, 'is not mortal. Men die but the Government lives on. The forests, like the race, must

live on also. And the government alone can have, and does have, the continuity of purpose without which, in the long run, the forests cannot be saved.'

The opposition to private control was by no means an argument for locking up resources. It was, rather, a precondition for wise use. To quote Pinchot again, 'the job was not to stop the ax, but to regulate its use.' Likewise, the first head of the U.S. Bureau of Fisheries noted that 'while we are aiming to prevent the depletion of the great resources with which our country has been blessed, it follows logically that these resources must not be permitted to lie in a state of unproductive idleness.' The 'real problem of conservation,' he continued, 'is plainly a problem of efficient development and utilization.' That was a specific aim baldly stated: but men like Gifford Pinchot were also prone to identify their ideology with all that was good and noble in the human condition. In an essay published in the magazine *American Forests*, Pinchot wrote that Conservation

is the wise and far-sighted use of all the things—natural, artificial, and spiritual—which men require upon this earth. . . . Conservation is as wide as the earth itself, as inclusive as the needs and interests of humanity upon the earth. It is far too great a question, therefore, to be included within the bounds of any single government department . . . It is the background, the spirit, and the strength of the progressive movement in American public life. It is the forward-looking point of view. It is the signboard on the road to a greater and better America.

Other conservationists were generally less lyrical, defining their faith more modestly in terms of its abhorrence of waste and its emphasis on wise use. These were embodied in the definition of conservation as 'the greatest good of the greatest number *for the longest time*,' this last phrase giving a distinctive twist to the ideals of utilitarian philosophy. The credo of scientific conservation was early and authoritatively expressed in George Perkins Marsh's *Man and Nature*, a book which drew upon the author's varied professional experience—as farmer, timber merchant, fish commissioner, plenipotentiary and Congressman—and his wide travels through North America and Europe. Recent scholarship has suggested that the strong and at times almost hysterical condemnation of peasants and pioneers by foresters and soil conservationists stemmed in good part from a competition for territory, with the conservationist aiming to take over, under state auspices, land or forests controlled by rival groups. Marsh himself was not interested in power; his language was sober rather than choleric, but his conclusions were equally disturbing. Taking a global view, he remarked that

Man has too long forgotten that the earth was given to him for usufruct alone, not for consumption, still less for profligate waste . . . There are parts of Asia Minor, of Northern Africa, of Greece, and even of Alpine Europe, where the operation of causes set in action by man has brought the face of the earth to a desolation almost as complete as that of the moon . . . The earth is fast becoming an unfit home for its noblest inhabitant, and another era of equal human crime and human improvidence . . . would reduce it to such a condition of impoverished productiveness, of shattered surface, of climatic excess, as to threaten the deprivation, barbarism, and perhaps even extinction of the species.

David Lowenthal, Marsh's biographer, writes that through the Vermonter's studies 'History revealed man as the architect of his own misfortune, but when the processes of nature were better understood, foresight and technical skill might reverse the decline.' In Marsh's view man was an agent of destruction as well as regeneration, with the potential, as he so beautifully put it, to be a 'restorer of disturbed harmonies.' For the history of early modern Europe had shown quite clearly that judicious intervention and systematic management could rehabilitate degraded forests, thereby arresting soil erosion, helping to regulate the flow of streams and rivers, and (not least) assuring a steady supply of wood for the economy. As Marsh wrote in the preface to his great work, 'my purpose is rather to make practical suggestions than to indulge in theoretical speculations.' Pre-eminent here was the need for public ownership of forests and water, resources so vital to the social and economic life of the nation. In his view, concessional grants to individuals and companies, while an attractive option in the short term, 'may become highly injurious to the public interest for years later: an outcome he thought unlikely were these resources securely under state control. Marsh's insights, writes Lowenthal, were to 'become the guiding principles behind American conservation policy,' to be embodied, in time, in such institutions as the United States Forest Service and the Bureau of Reclamation.

The poet and critic Matthew Arnold said of Marsh that he was 'that *rara avis*, a really well-bred and trained American,' the characteristically English note of condescension barely masking what was well-considered and well-merited praise. But Marsh was also a genuine internationalist, who sought to influence the New World through the example of the Old, and whose work, in turn, was read and admired as far afield as India and Australia (and also in Russia, where his book had appeared in translation as early as 1866). Appositely, the Vermont conservationist spent his last days in a forestry school in the mountains above Florence, talking with students and walking

among the firs. When he died there, on July 23, 1882, his body was draped in an American flag, but his coffin was carried down the hill by the Italian students, to be finally buried in a Protestant cemetery in Rome. In life, as in death, George Perkins Marsh epitomized the internationalism of scientific conservation, the movement of which he was such an outstanding exemplar.

THE GLOBAL REACH OF SCIENTIFIC FORESTRY

Scientific forestry, the oldest and most influential strand in the conservation movement, had its origins in late medieval Europe. By the end of the nineteenth century, however, it had moved steadily outward to embrace much of the globe. France was a pioneer, introducing a Forest Code in the fourteenth century and a stricter forest ordinance in 1669, both initiatives aimed at regulating wood production for the navy. But by the eighteenth century, Germany had clearly emerged as the front-runner in the field.

The ascendancy of German forest science was a consequence of the quantitative methods developed there to estimate growing stock and yield. In large, powerful kingdoms such as Frederick the Great's Prussia, forestry officials reaped the benefits of a centralized administration which enabled the close supervision of state forests. In refining techniques of sustained-yield management, foresters moved from an area-based approach to a more reliable yield-based system. In the former case, foresters estimated the mature age of a tree species, then divided up the forest into areas whose number equalled this age (in years): on the assumption that equal areas yielded equal amounts of wood, the harvest of one patch annually would not dip into forest capital. Over time, this was replaced by a system based more directly on estimates of the volume and weight of trees of different ages. By carefully studying growth patterns on experimental plots, silviculturalists developed standard 'yield tables' for different species which computed, with a fair degree of accuracy, the wood mass of individual trees as well as of whole stands. These numbers, adjusted for varying soil and moisture conditions, then formed the basis of sustained-yield forestry.

To quote the historian Henry E. Lowood, 'Theories, practices and instructional models from Germany provided the starting point for every national effort in forest science and management until the end of the nineteenth century.' German foresters were mercenaries as well as missionaries, enthusiastically traveling abroad to promote

and propagate methods that had successfully stabilized the forest economy of their land. Throughout Europe, in Austria, Poland, Russia, Finland, Sweden, even in France—close neighbor, old enemy, and forestry pioneer itself—forest schools and departments were established on the German model and very often with German technical support.

German experts also set up forestry establishments in their own colonies and, perhaps more surprisingly, in colonies controlled by rival European powers as well. When the Dutch wished to systematically exploit the teak forests of Java, they could only turn to Germans for advice. From 1849 till the early decades of this century, a stream of German experts arrived to help the Dutch colonies institute a forest regime, based on strict state control. The foresters' brief was to harvest teak for the construction of roads, railways, and for the growing export trade—teak being a high-quality wood plundered for making furniture to adorn European drawing rooms. Likewise, the Indian Forest Department was serenely guided, for its first half century, by three successive German Inspectors General of Forest: Dietrich Brandis, Wilhelm Schlich, and Bertold von Ribbentrop. The Germans took on a wide array of tasks seen as essential for successful forest administration: the reservation of forest areas to the state, by curtailing or extinguishing rights exercised by village communities; dividing up these reserves into territories controlled by individual officers; identifying valuable species and studying their growth curves; and finally, establishing schools and laboratories for furthering research and education. In time, British officers trained by Brandis and company emerged as forest internationalists in their own right, with officials of the Indian Forest Service helping to set up forest departments in West and East Africa, in South East Asia, and in New Zealand.

One of the most remarkable of these German forestry missionaries was Ferdinand Müller, a graduate of the University of Kiel appointed Government Botanist of the Australian province of Victoria in 1852. Over a forty-year period Müller used the varied fora of the government commission, the scientific seminar and the newspaper column in awakening the Australian public to the destruction of forests which provided pit props for their mines, charcoal for their railway engines and, indirectly, water for their rivers. Unusually for a forester, Müller used ethical and esthetic arguments in conjunction with the more familiar utilitarian ones. In an address of June 1871 to the Technological Museum in Melbourne, he urged that the forest be seen

as an heritage given to us by nature, not for spoil or to devastate, but to be wisely used, reverently honoured, and carefully maintained. I regard the forests as a gift, entrusted to any of us only for transient care during a short space of time, to be surrendered to posterity again as an unimpaired property, with increased riches and augmented blessings, to pass as a sacred patrimony from generation to generation.

The German experience also deeply stamped the evolution of North American forestry. A Prussian forester, Bernhard Fernow, was in 1879 appointed the first chief of the Division of Forestry in the Federal Government; he went on to set up forestry schools at the universities of Cornell and Toronto. When a full-fledged forest service was created in 1900, its first head was a home-grown American, Gifford Pinchot, the scion of a distinguished Pennsylvania Republican family who ended up as governor of his home state. But Pinchot himself always maintained that his mentor was Dietrich Brandis, the German scientist who set up the Indian Forest Department. When, in the 1880s, the American decided to make a career in forestry, he made a pilgrimage to Bonn, where Brandis lived in retirement. Brandis took charge of Pinchot's education, continuing to advise him after his return to the United States. In his autobiography, *Breaking New Ground*, Pinchot generously acknowledged this debt. 'Measured by any standard, Brandis was the first of living foresters,' he wrote, who 'had done great work as a pioneer, and had made Forestry to be where there was none before. In a word, he had accomplished on the other side of the world [in India] what I might hope to have a hand in doing in America.' The impact of Brandis on Pinchot, and the more general influence of German forestry on American forestry, are illustrated in the *box*.

Gifford Pinchot also helped found a forestry school at Yale University which rapidly established itself as a world leader in forestry research and education. Fittingly, it was the Yale University Press which, in 1938, published the first historical survey of the significance and impact of German forestry. The author, a reputed German silviculturist named Franz Heske, celebrated his country's experience as a 'shining example for forestry in all the world.' After having transformed their 'depleted, abused woods' into 'well-managed forests with steadily increasing yields,' German foresters, working at home and overseas, had made it

considerably easier for the rest of the world to pursue a similar course, because the attainable goal is now known, at least in principle. The sponsors of sustained-yield in countries where forestry is still new can find in the results of this large-scale German experiment a strong support

in their battle with those who know nothing, who believe nothing, and who wish to do nothing [to protect forests]. This experiment and its outcome have rendered inestimable service in the cause of a regulated, planned development and use of the earth's raw materials, which will be an essential feature of the coming organic world economy.

AMERICA LOOKS TO EUROPE

Two Chiefs of the United States Forest Service outline their country's debt to Germany and Germans.

1. We see the need of curbing individualistic exploitation and we are looking towards the future with justified apprehension. In this situation we instinctively turn to the experience of older countries. . . . In Germany the conflict between public interest and private right is resolved by the concept of the dependence of the individual on the nation as a whole, '*Gemeinnutz geht vor Eigennutz.*' In no other framework could the crowded nations of Europe maintain their national well-being. This tenet of totality is the growth of centuries of sacrifice and struggle. It has gained a perspective in which the future becomes a fixed reality. In German forestry policy this concept is expressed in what foresters call sustained-yield management. It is what Dr Heske calls it, an example for all the world.
2. His connection . . . with the English students led Sir Dietrich [Brandis] very naturally to take charge of American students who came to Europe to study. Taking charge of a student meant with him not merely to advise as to the general course of study, but also to require bi-weekly reports, and to read and to criticize them, to send long letters written in longhand to each of us from time to time, and in every detail to try, with a never-ending patience, enthusiasm and generosity, to see that each of us got from his work exactly what he came for. This was done for me, then for Graves, then for Price, Olmsted, Sherrad and many others. Sir Dietrich thus had a guiding hand in shaping many of the men whose fortune it became afterwards to shape the general policy of forestry in the United States.

Source: 1. Henry S. Graves, 'Preface,' in Franz Heske, *German Forestry* (New Haven: Yale University Press, 1938), pp. xvii-xviii.
2. Gifford Pinchot, 'Sir Dietrich Brandis,' *Proceedings of the Society of American Foresters*, volume 3, number 1, 1908, pp. 58-9.

A forestry pioneer trained in France rather than Germany was the Mexican Miguel Angel de Quevedo. Born in 1862, Quevedo took a bachelor's degree in Bordeaux before moving to the Ecole Polytechnique in Paris to study hydraulic engineering. Here one of

his teachers told him that an engineer not instructed in forestry was 'deficient, an ignoramus who will make grave mistakes.' The lesson came home most forcefully when Quevedo returned to Mexico in 1887, and began work as a hydraulic engineer. Supervising a drainage project outside the capital, Mexico City, he came to understand the impact of deforestation in the hills on flooding in the plains below. He then spent a decade as a consultant to various hydro-electric companies, studying afresh how forest cover, or its disappearance, had an impact on water flow and rates of sedimentation.

Quevedo's public debut as a forestry campaigner came at a 1901 conference on climate and meteorology. Here he spoke out on the need for a nation-wide law to protect and replenish Mexico's fast-depleting forests. He then started a lobbying group, the Junta Central de Bosques: this promoted parks and tree nurseries in the cities, and compiled inventories of forest cover in different districts. In 1917 he persuaded the new post-revolutionary government to insert a clause in the Constitution, which read: 'The nation shall always have the right to impose on private property the rules dictated by the public interest and to regulate the use of natural elements, susceptible to appropriation so as to distribute equitably the public wealth and to safeguard its conservation.'

In 1922 Quevedo founded the Mexican Forestry Society to more effectively 'clamor against the silence of our country against the national suicide that signifies the ruin of the forest and the scorn of our tree protector.' Quevedo and his society were instrumental in the passing, at last, of a national forest act in 1926. By now, his work had come to the attention of Mexico's new President, Lazaro Cardenas, a progressive reformer already known for his interest in land reform and workers' rights. In 1935 Cardenas created a Department of Forestry, Fish and Game. Quevedo was appointed its first commissioner, an appointment, as one of his followers remarked, which 'constituted the synthesis and crowning achievement of the great work in defense and propagation of our natural resources that the wise investigator, the noble apostle, the pure spirit, Miguel Angel de Quevedo has undertaken during his life.'

Quevedo's recent biographer, Lane Simonian, likewise refers to him as 'Mexico's apostle of the tree.' He was certainly a remarkable man, in energy and foresight fully the equal of other and, thus far, better-known conservationists from other lands. Quevedo shared with these contemporaries a hostility to peasants, whom he held to be chiefly responsible for the destruction of his country's forests. He also tended to oscillate between exuberant optimism, foreseeing

a future when scientists would finally be in charge, and bleak pessimism, in case his technically equipped visionaries were not placed in positions of power and influence. The following quote, from 1939, captures him in the latter mood, in despair after forty years of mostly unsuccessful preaching and proselytizing:

Each day the Mexican forest problem becomes graver: the large woods are being depleted at an alarming rate, the production of chicle diminishes notably year by year, the hardwoods and even firewood cannot be obtained in regions once classified as heavily forested. Everywhere one observes forests impoverished and ruined by greed and thoughtfulness and almost we can claim that Mexico is heading for drought.

[translated by Lane Simonian]

THE BALANCE SHEET OF SCIENTIFIC FORESTRY

The actual experience of scientific forestry was quite often at odds with its professed aims and supposed achievements. Especially in the colonies, it followed a 'custodial' approach, with the strengthening of state control having as its corollary the denial of customary rights of user exercised by peasant and tribal communities. For the acres and acres of woodland taken over by the state were by no means pristine, untouched forests; rather, they had been controlled and used by humans down the centuries. Peasants and pastoralists, swidden cultivators and wood-working artisans, all looked upon the forest as a provider of their basic means of subsistence: the source of fuel for cooking, grass for livestock, leaf for manure, timber for homes and plows, bamboos for baskets, land for extending cultivation, herbs for curing ailments, and so on. When access to these resources was restricted by the creation of strictly protected government reserves, escalating conflict between local communities and forest departments was the inevitable outcome.

In South Asia, where the history of scientific forestry has perhaps been most fully documented, the forest department quickly became a reviled arm of the colonial state. When a comprehensive Indian Forest Act was enacted in 1878—to supersede a preliminary Act of 1865—the government was warned, by a dissenting official, that the new legislation would leave 'a deep feeling of injustice and resentment amongst our agricultural communities;' indeed, the act might 'place in antagonism to Government every class whose support is desired and essential to the object in view [i.e. forest conservation], from the Zamindar [landlord] to the Hill Toda [tribal].' These

words were far-sighted, for once the act was in place, peasant and tribal groupings resisted the operations of the Forest Department in all kinds of ways: through arson, breaches of the forest law, attacks on officials and on government property, and quite often, through co-ordinated and collective social movements aimed at restoring local control over forests. These rebellions formed part of broader nationalist upsurges; sometimes engulfing thousands of square miles, they were quelled only by the superior firepower of the colonial army and police.

A flavor of the sentiments behind these militant and enduring protests is contained in some remarks of the nineteenth-century social reformer, Jotiba Phule. Writing in 1881, Phule captured the transformations that the forest department had wrought in the Indian countryside. 'In the old days,' remarked the reformer,

small landholders who could not subsist on cultivation alone used to eat wild fruits like figs and [berries] and sell the leaves and flowers of the flame of the forest and the mahua tree. They could also depend on the village ground to maintain one or two cows and two or four goats, thereby living happily in their own ancestral villages. However, the cunning European employees of our motherly government have used their foreign brains to erect a great superstructure called the forest department. With all the hills and undulating areas as also the fallow lands and grazing grounds brought under the control of this forest department, the livestock of the poor farmers do not even have place to breathe anywhere on the surface of the earth.

[translated from the Marathi by Madhav Gadgil]

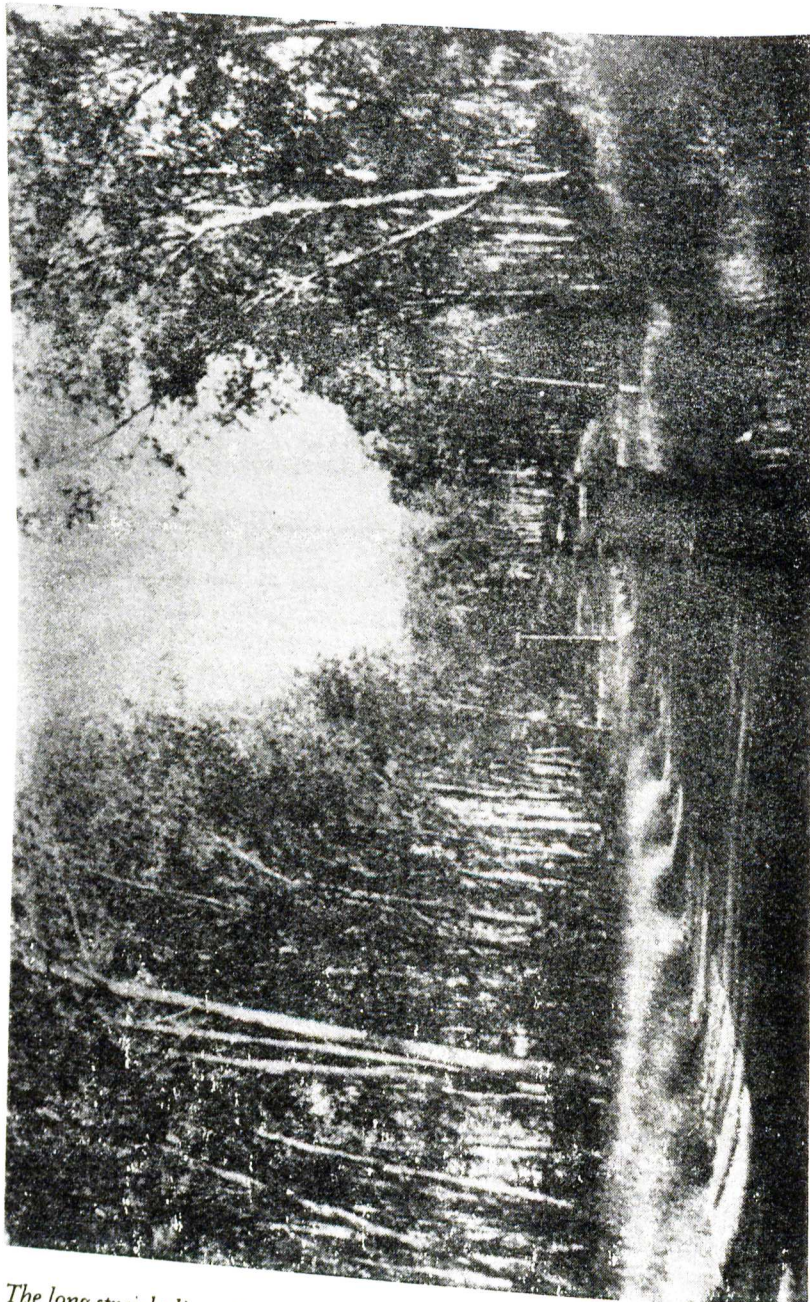
These contemporary *social* criticisms of scientific forestry (see also quotes in *box*) have now been joined by retrospective *environmental* ones. Recent work by ecologists suggests that, at least in the tropics, sustained-yield forestry has been honored mostly in the breach. Tropical forests are very diverse in their species composition, quite unlike the species-poor temperate woodlands where scientific forestry was first formulated and, for the most part, successfully applied. In Northern Europe, a single species of pine might dominate large areas of forest; a situation far removed from the tropical humid forests of Asia and Africa, in one acre of which dozens of tree species co-exist along with hundreds of plant varieties in the understorey, not to speak of thousands of micro-organisms and animals of many shapes and sizes. In South and South-east Asia, an additional complicating factor is the monsoon, the two or three months of torrential rain which quickly wash away soil exposed by logging, thus rendering regeneration extraordinarily difficult. In such circumstances, it is

highly questionable whether sustained-yield forestry on the European model can be successfully practised, a skepticism that is borne out by the record. In India, for instance, 130 years of state forest management have left the forests in much poorer condition than they were when scientific forestry first made its appearance. Twenty-two per cent of India's land mass is still controlled by the forest department, but less than half of this has tree cover on it: proof of the failures of German forestry to successfully replicate itself in the tropics.

PEASANTS VERSUS THE FOREST
DEPARTMENT

In 1913 the Government of Madras appointed a Commission to investigate grievances against the forest administration. Offered here are two exchanges with the Commission, one with a group of ryots (peasants), the other with an individual landholder identified by name. The conversations reveal the sharp opposition between scientific foresters and the interests of the rural community.

- | | |
|-------------|---|
| Committee | : What is your next grievance? |
| Ryots | : We have no firewood; and are not given permits for them. |
| Committee | : Are you willing to pay for permits for firewood? |
| Ryots | : No; it has not been the custom up till now. There are only three or four rich ryots and all the rest are poor and cannot pay for fuel. We pray that we may be given the grants. |
| Committee | : At present what do you burn? |
| Ryots | : We use cow-dung cakes . . . We want more manure leaves. |
| Committee | : Do you always use them? |
| Ryots | : When the land was a [commons], we used to get leaves for manure, sixteen years ago. |
| Committee | : You do not get them now? |
| Ryots | : Occasionally one or two men who can afford it send their men to distant places to get leaves. |
| Committee | : What are your difficulties about the forests? |
| Timma Reddy | : There are two temples on the top of the hill . . . There is worship there every week. There are many devotees. If ryots go there, the forest subordinates trouble them and they do not go even to the temple. If we do not worship in any year, tanks will not get supply of water. |



The long straight lines of scientific forestry: an eucalyptus plantation in Goa, Southern India.

SOURCE Photo by M. D. Subhas Chandran

- Committee : Did you worship this year?
- Timma Reddy : Yes. A case was also made against us. While the God was being taken along the path, some trees were said to have been injured and the District Forest Officer inquired and let us off. . . . We worship every year. Instead of worshipping the God there, the ryots have to worship the forest subordinates.
- Committee : Did you not represent to the District Forest Officer?
- Timma Reddy : Once we went to worship the God and a case was made against my brother that he went for hunting. The District Forest Officer charged us for trial in the Taluk Magistrate's Court. There we were acquitted. Even if we go to the D.F.O., we thought we will not have justice. So we do not go to him.

Source: Atluri Murali, 'Whose Trees? Forest Practices and Local Communities in Andhra, 1600-1922,' in David Arnold and Ramachandra Guha, editors, *Nature, Culture, Imperialism: Essays on the Environmental History of South Asia* (New Delhi: Oxford University Press), pp. 106, 110.

One Asian country that has not followed European models—in this as in so many other respects—is Japan, also, and not coincidentally, a country that never came under colonial rule. Independent of, and at least as early as in Germany, Japanese scientists had developed skilled methods of regenerative forestry that helped stabilize the forest cover and mountain slopes of their islands. The historian Conrad Totman notes that between 1590 and 1660 Japanese farmers and timber merchants 'devastated much of their forest land and seemed to be in the process of pressing the archipelago beyond endurance.' Disaster was forestalled by a mix of negative and positive interventions; the former aimed at restricting and regulating tree-felling so as to assist natural regeneration, the latter at more actively enhancing tree cover through plantations, especially of conifers. Large tracts of woodland owned by temples and shrines were also sequestered by the central government, to be worked on rotations of a hundred years and more. Meanwhile, a proliferation of books and pamphlets authored by officials and intellectuals urged the public to help the government protect forests and pass on their patrimony to later generations. As Totman observes, the concerns of these writers were emphatically practical, affirming not a mystic ecological consciousness—of the

kind looked for by recent Western enthusiasts of Japanese Zen Buddhism—but, rather, highlighting the very real dangers of soil erosion and resource shortages that deforestation would give rise to. An official of the Akita district wrote, in the early seventeenth century, that 'The treasure of the realm is the treasure of the mountains [i.e. soil and water]. When all the trees are cut and gone, however, their value will be nil. Before all is lost, proper care must be taken. Destitution of the mountains will result in destitution of the realm.' This is a succinct statement of the ideology of scientific conservation, apocalyptic at one level, holding out the hope of redemption at another.