Nature and Nation
Britain and America in the 19th century

David Lowenthal explores natural history enthusiasms among Victorian Britons and Americans, and finds an explanation for their differing approaches to conservation.

In 1859, the year of Darwin's *On the Origin of Species*, the American artist Frederic Edwin Church's huge, magnificent painting 'The Heart of the Andes' was unveiled in New York City to intense excitement. It celebrated the conjunction of nature and art preached by Alexander von Humboldt (1769-1859), the epoch's most admired naturalist. As Rebecca Bedell has shown, the overall composition and almost every pictorial detail of the work had 'its counterpart in Humboldt's words'. Church had steeped himself in Humboldt's travel writings, visited his favourite South American scenes, stayed in Humboldt's abode in Ecuador. After the opening, Church sent his painting to Humboldt, to re-experience the scenery that had delighted him sixty years previously. He was too late; the great explorer had just died. Inspired by Humboldt, naturalists of the day adopted his integrative perspective, encouraging understanding of nature through poetry, gardening, and landscape painting.

Natural history became a hugely popular cult in early nineteenth-century Britain and North America. Yet its seeds had germinated mainly outside the English-speaking world. Carl Linnaeus in Sweden had taught scholars to classify, name and rationally order the whole of animate creation. German chemists and anatomists had revealed the molecular make-up and growth mechanisms of living things. Polymaths like Buffon, Cuvier and Humboldt had depicted terrestrial nature in all its diversity. Nicolas Poussin's and Salvator Rosa's pastoral landscapes had intensified aesthetic delight in rural scenes. The prose and poetry of Goethe and Rousseau had infused Enlightenment nature philosophy with Romanticist sentiment. And it was largely Continental mariners and explorers, traders and settlers who had opened to scrutiny previously uncharted lands all over the globe. British and American knowledge and appreciation of nature closer to home also lagged behind that on the Continent. Rural Britain long remained inhospitable to the studious or curious wayfarer, apt to be set upon by highwaymen, unlikely to find lodgings of even minimal comfort, and otherwise deterred from wandering through the countryside, and most Americans were too busy subduing the wilderness and coping with its perils to enjoy its felicities.

Church's 'Heart of the Andes' (1859) embodied the observations on nature, science and art of the German naturalist Alexander von Humboldt.

Nevertheless, it was chiefly in nineteenth-century Britain and America that natural history was widely and passionately pursued. And despite divergent landscapes, societies and settlement histories, British and American interests were remarkably similar. American devotees of Charles Lyell, Hugh Miller, Gilbert White, and John Ruskin imbibed the same enthusiasms as

An excursion of the Liverpool Naturalists' Field Club, 1860.

Von Humboldt visited South America in 1799-1804. He inspired a holistic approach to environmental experience and understanding.

British nature-lovers, even if they confronted different plants and animals, rocks and fossils. Lyell's American visits in the 1840s played a vital role in bringing together the two nations' natural history concerns. And the depictions of primordial landscapes in Miller's *The Old Red Sandstone* (1841) enthralled American no less than British readers. One wet morning in the Catskill Mountains in 1857, the American landscape painter Asher Durand was 'so excited by Miller's revelations', his daughter recorded, 'that he could hardly wait for the rain to let up so that he could rush down to a nearby creek, break open some of the sandstone on its banks, and see what it might reveal of the earth's history'. Praise of natural history pursuits as educative, healthful, edifying and, above all, sanctioned by Scripture animated outdoor inquiry on both sides of the Atlantic.

In Britain all facets of nature – plants, animals, rocks, fossils – generated a degree of public involvement between 1820 and 1860 unequalled before or since. Amateur interest was not unprecedented – eighteenth-century landowners and aristocrats had collected curiosities of nature; Gilbert White's *Natural History of Selborne* (1789) celebrated intimacy with everyday rural scenes. But only after the Napoleonic Wars did nature in Britain attract not only aristocrats and cognoscenti but rural clerics, genteel ladies, tradesmen, farmers and factory workers.

The craze for nature took diverse forms, but devotees of flowers, beetles, birds and fossils shared the aim to collect, identify, and classify specimens of as many discrete forms or species as possible. To possess and to understand things were twinned obsessions. Linnaean categories brought nature lovers together in a grand collaborative enterprise, gathering myriad minutiae into comprehensive compendia of everything, organic and inorganic, that had ever existed on earth. Curiosity formerly confined to the unique and the spectacular expanded to embrace the lowly and the commonplace, even creatures great and small once shunned as dangerous or disgusting. Nothing on God's earth lacked intrinsic merit – all creatures were lovingly studied as manifestations of His wondrous workmanship.

Indeed, a central precept of the naturalist enterprise was to view nature's innumerable facets not as isolated details but as integral components of an organic whole. Decades before the term 'ecology' was coined in 1866, popular natural science evinced a proto-ecological concern with the interaction of living creatures and their milieus. But the generalising bent of amateur naturalists, along with their subjective, narrative approach, drew the scorn of professionals. Scientific botany and zoology dealt not with the dynamics of whole living organisms in the field but with dissection of fragments in the laboratory. For some time British natural history resisted the specialisation that brought amateurs into disrepute on the Continent. The stone-mason Hugh Miller was by no means Britain's only self-trained geologist; on taking the Woodwardian Chair of Geology at Cambridge in 1818, Adam Sedgwick confessed he knew

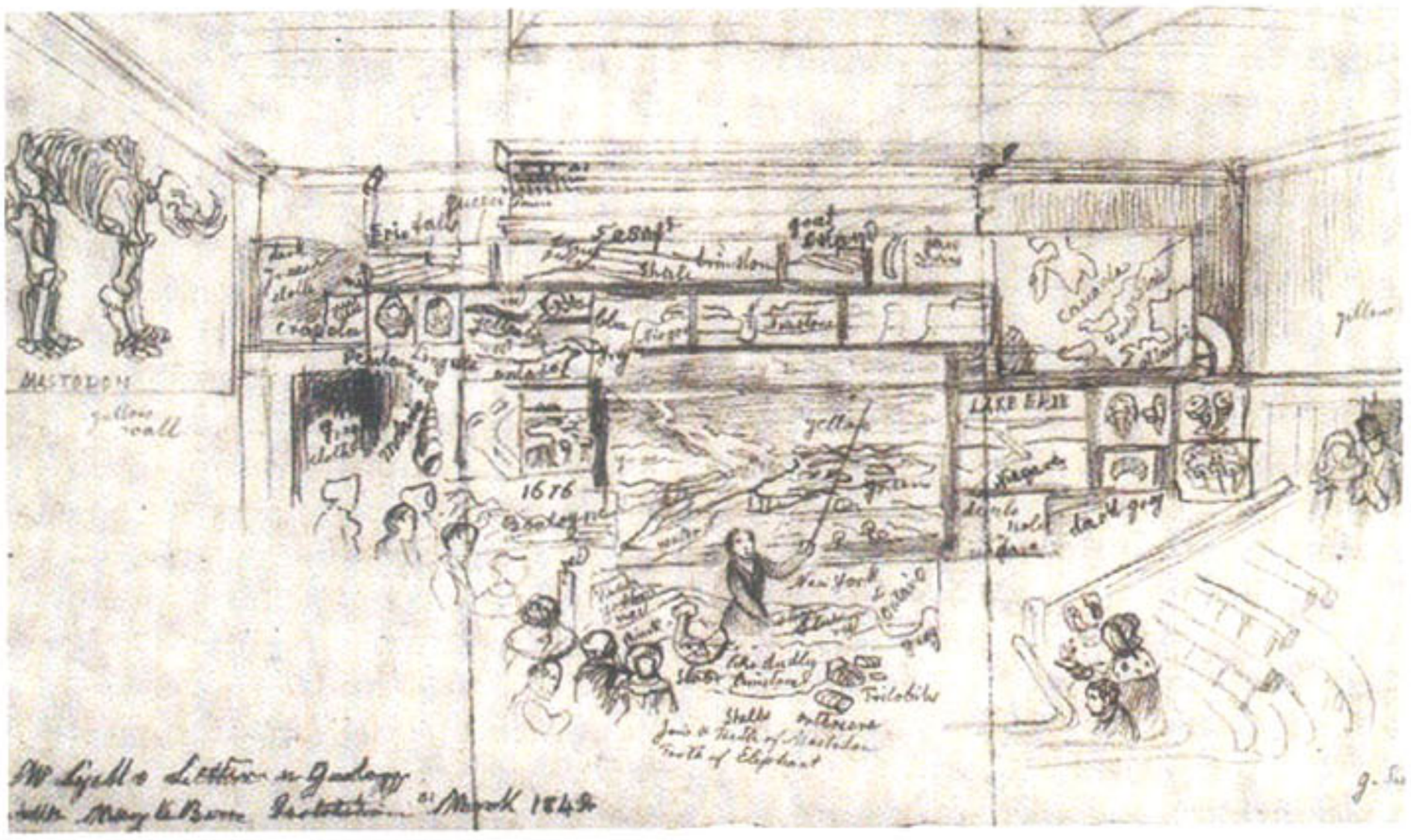
All creatures great and small: a detail from *Common Objects of the Microscope* by the Rev J.G. Wood showing circulation of blood in a frog's foot.

Human submission to the greater forces of God and nature informed romantic images like this scene of the ruins of Glastonbury Abbey by George Arnald (1763-1841).

nothing about the subject: 'Hitherto I have never turned a stone'; he promised that 'now I shall leave no stone unturned'. As late as 1866 the German chemist Justus von Liebig grumbled that among British geologists, 'even the greatest, I found only an empiric knowledge of stones and rocks'. Liebig was dismayed that 'without a thorough knowledge of physics and chemistry, even without mineralogy, a man may be a great geologist in England'.

Amateur naturalists remained attentive to the larger fabric of nature. Eager to see how the particulars they observed were interwoven, they learned to appreciate the entirety of their settings. Transcending earlier taste for Sublime and Picturesque features, Britons evinced an insatiable appetite for scenic sketches, in words as well as in the pictures of such luminaries as Constable and Turner, of every facet of the rural landscape. From seashore strands to moors and mountains, from sand specks and protozoa to all-embracing panoramas, knowing and feeling were conjoined, not conflicting, modes of apperception. A Humboldtian synthesis of science and art continued to vitalise what Philip Henry Gosse entitled *The Romance of Natural History* (1860). Whereas the dispassionate procedures of professional scientists distanced them from their subject matter – studying vegetable physiology while knowing nothing of plants, as the Cambridge entomologist Charles Babington scoffed in 1888 – popular natural science was enlivened by personal narratives highlighting the observer's own engagement with nature.

Literary art intensified such feelings, for science required art, proclaimed Herbert Spencer in 1861, 'and whoso will dip into Hugh Miller's works on geology ... will perceive that science excites poetry,

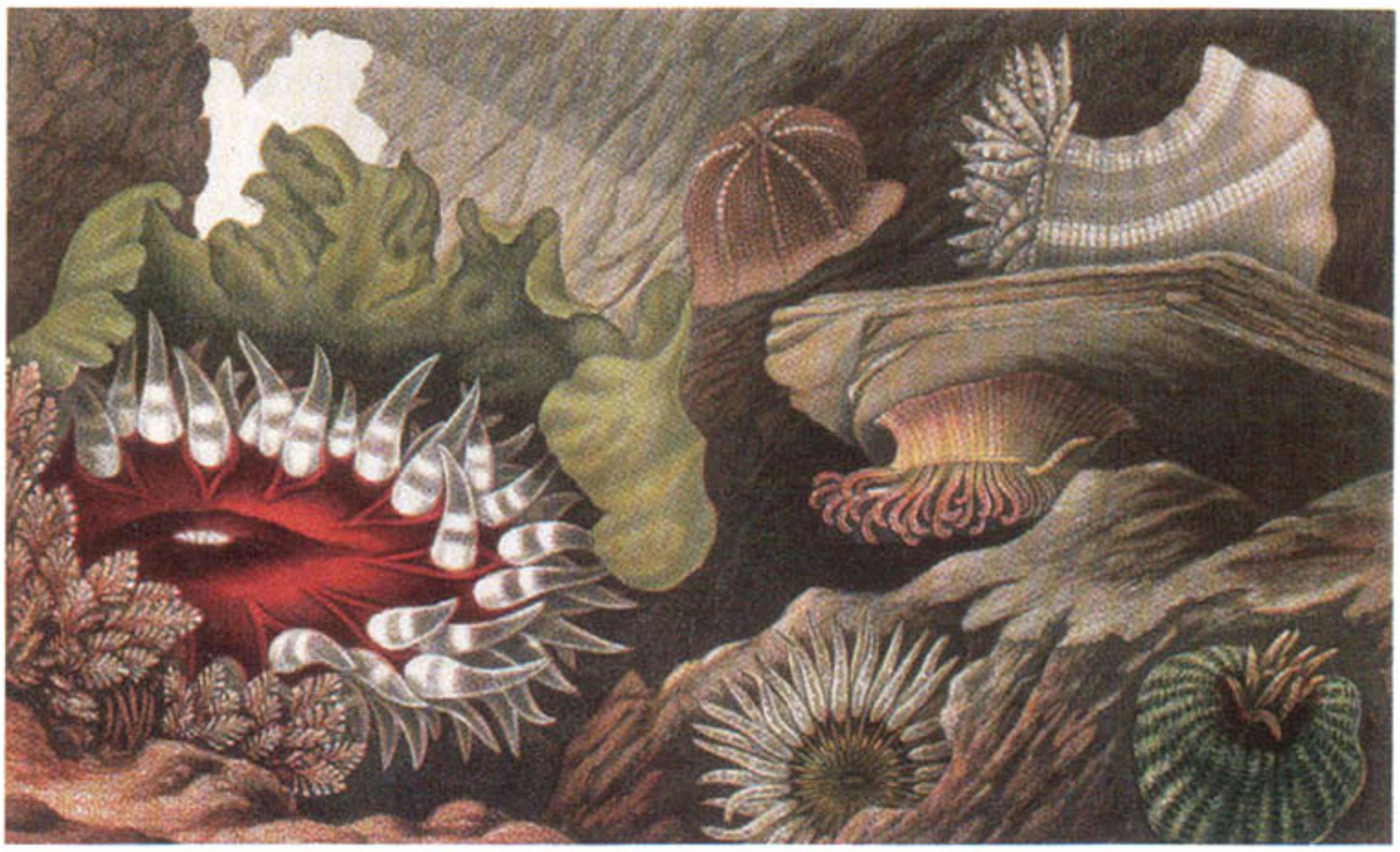


Charles Lyell lecturing at the Marylebone Institution, March 1844 (anon).

rather than extinguishes it'. Ruskin's attention to rocks in *Modern Painters* excited devotion to mountain scenery, linking the awesome subject matter of geology with every other aspect of natural history.

Seminal to Britain's natural history boom were several social and technological innovations. Improved roads and a fast-expanding railway grid brought virtually the whole of Britain within reach, dispelling fears of untamed countryside. Massive urbanisation bred revulsion to city filth and squalor, with rural scenes both nostalgically idealised and actively re-experienced; 'no longer surrounded by nature', in Lynn Merrill's phrase, 'industrialised Victorians had to seek it out'. Cheaper printing and lithography put texts and pictures of nature into the hands of millions, stimulating mass visits to the scenes described. An inexpensive 1827 edition gained White's *Natural History of Selborne* widespread vogue. J.G. Wood's *Common Objects of the Country* (1858) sold 100,000 copies in its first weeks, five times the first-year sales of Samuel Smiles' famous *Self-Help* (1859). Mass-produced optical devices, notably the compound microscope, fuelled fascination with realms of nature invisible to the naked eye, the forms and colours of myriad tiny creatures admired as evidence of Creation's inexhaustible wonders. The craze for ferns and the craving for grubbing in rock-pools at the seaside, popularised by Gosse's engaging handbooks, went hand in hand with the plant display cases and marine aquaria that festooned countless parlours.

Victorian naturalists adduced manifold benefits for their pursuits. The study of nature was a tonic to health, to education, to morality. It honed senses of sight and touch, enhanced aesthetic sensibility, dispelled the dyspepsia of city life, and kept mind and body fruitfully occupied. 'Muscular Christianity' involved much more than strenuous Alpine mountaineering and Arctic exploration. The 'listless discontent' suffered by the vicar of a remote unlettered parish might be cured by natural history: 'Make a geological map of your parish', advised Oxford geologist Hugh Edwin Strickland in 1852. 'Form a collection of all its animal, vegetable and mineral productions'. Victorian aversion to sloth, and belief in the restorative virtues of fresh air and exercise, were epitomised in the Cambridge geologist Sedgwick's 1830s outdoor lectures, orated to scores of students while cantering across the Fens on horseback. Above all, natural history was lauded as a vital adjunct to Christian faith. Attention to nature's intricate interconnections heightened awareness of divine creation. In line with Dean William Buckland's 1836 attestation that geology and fossil relics confirmed Biblical history, the study of nature was commended as not only consonant with, but demanded by, dutiful piety.



Philip Henry Gosse's artistic depictions of natural wonders such as these sea anemones, 1860, whetted the appetite of amateur naturalists.

Adam Sedgwick (1785-1873), professor of geology in Cambridge and one of many to combine an interest in natural history with a clerical role; he was also a prebendary in Norwich.

These benefits were lauded as accessible to all, not merely to a well-heeled elite. That even the least schooled observer might usefully contribute was a common trope of the time. 'Nature is vast and knowledge limited', wrote Hugh Miller. 'No individual, however humble in place or acquirement, need despair of adding to the general fund'. Enumerating natural history's many virtues, the zoologist William Swainson averred in 1834 that

> ... it can be prosecuted ... by almost every body, and under every ordinary circumstance ... It is as much within the reach of the cottager as of the professor.

But in England cottager and professor pursued their interests apart. Working-class devotees of natural history organised their own rambles and collecting excursions and met to exchange specimens and information in pubs shunned by gentlefolk. Only in Scotland were such natural history clubs a mode of social integration, bringing together, as at Alloa in Clackmannanshire, the earl, the druggist, the prison governor and the blacksmith.

Nature study expanded at about the same time and for the same reasons in America as in Britain, becoming the republic's most widely

pursued scientific activity. The end of the War of 1812 with Britain inaugurated decades of peaceful economic growth, with new roads and canals opening the eastern seaboard to easier and speedier travel. Democracy and schooling promoted egalitarian mores and well-nigh universal literacy. Notions of natural history as a refuge from the evils of city life, as a healthful, educative and virtuous endeavour, above all as proof of Creation's manifold blessings, spurred Americans as they did Britons. Americans especially affirmed literal faith in the Biblical account of Creation – a faith lent scientific authority by Louis Agassiz at Harvard, arch-opponent of Darwinian evolution: to study geology was 'to become acquainted with the ideas of God himself'. Nature worship suffused American literature and art. The novels of James Fenimore Cooper, the essays of Emerson, Thoreau, William Cullen Bryant, and John Burroughs, the landscapes of Thomas Cole and his followers reached millions.

Yet at the time the contrasts seemed more glaring than the resemblances. Many judged American nature study – like New World nature itself – in its feeble infancy. Well into the mid-century, American practitioners felt inferior to Old World science in general, British natural history in particular. America's premier naturalists were mostly foreign-born, foreign-trained, their work largely financed and published abroad. Nine out of ten subscriptions for John James Audubon's *Birds of America* (1826-38) came from Britain.

Not until the 1848 advent of Agassiz from Switzerland to Harvard did Americans begin to feel professionally on a par with Old World science. The timing, intensity and components of popular American natural history differed in several respects from Britain. Americans by and large embraced nature later and less comprehensively; sentimentalised it less but humanised it more; linked love of nature more explicitly and emphatically with love of country; communed with nature's grandeurs more than its minutiae; dwelt on sites of unique splendour rather than, like Britons, spreading their concerns over the whole countryside; stressed the economic and ecological along with the civic benefits of studying nature; and came sooner and more strongly to promote its protection and conservation.

These last two American bents owed much to populist and patriotic egalitarianism. English elites disdained working-class naturalists as uncouth interlopers; Americans welcomed them as fellows in a joint enterprise of national improvement. Farmers' clubs promoted natural history as a pastime with practical and spiritual benefits. Lectures by scientists like Lyell and Agassiz attracted huge audiences – five- or tenfold those in Britain. Lyell was struck by how easily American 'labourers and mechanics mingled with those of higher status, to listen with deep interest to lectures on natural theology, zoology, geology'.

The spread of natural history enthusiasm was remarked on by a newspaper in 1868 Vermont:

> In almost every town there is a farmer or mechanic who has addicted himself to some kind of knowledge ... a shoemaker who has attained celebrity as a botanist, a wheelwright who would sell his best coat for a rare shell.

The untutored backwoodsman was deemed wiser than the academic scholar, for the locally grounded observer had 'greater opportunity to make new discoveries ... than the professor whose life is spent in the laboratory'. Nature study was championed for being inclusive – 'knowledge of one becomes knowledge of all'. In Canada, too, it was extolled for bringing together all classes and creeds – French and British, Protestant and Catholic, young and old, rich and poor; natural history was held conducive to social harmony because 'a true naturalist is never an ill-natured man'.

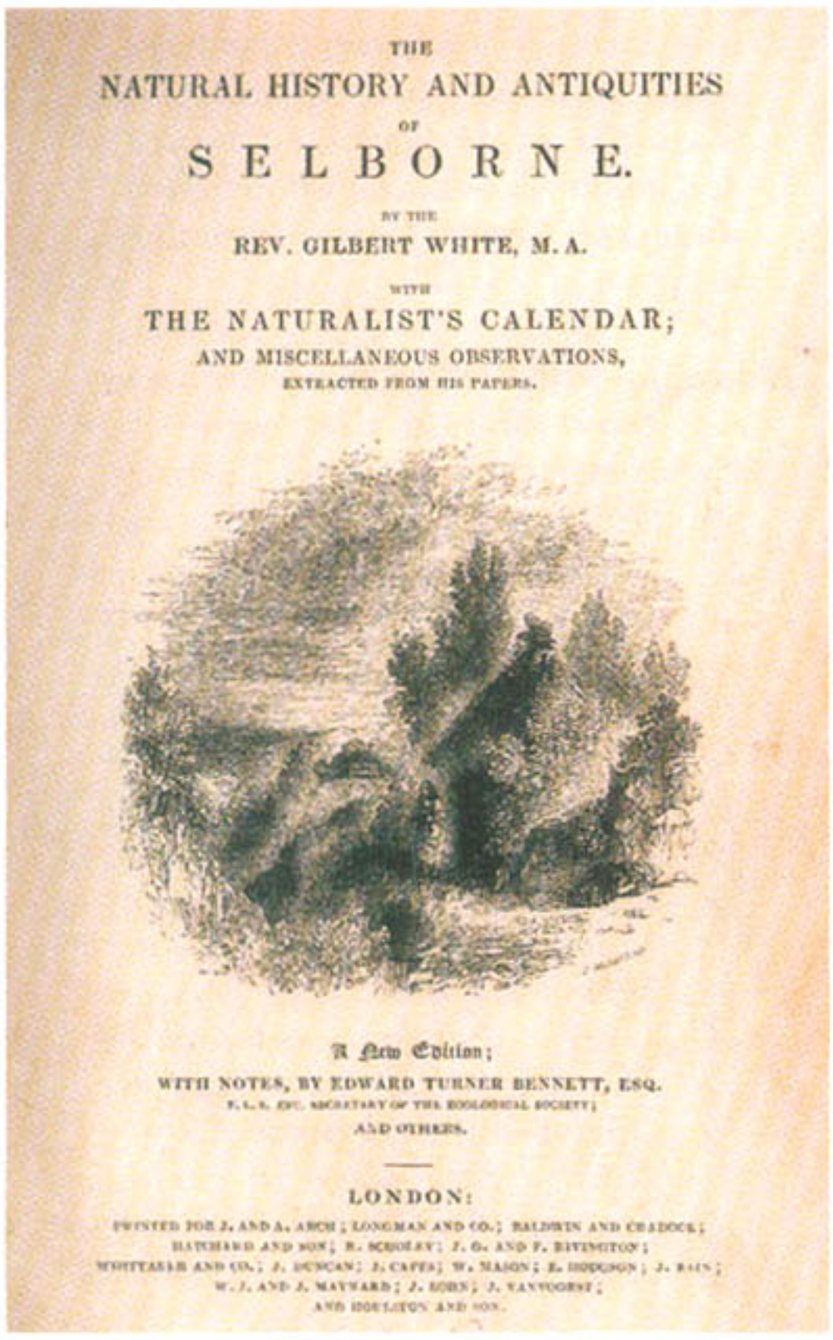
At the root of differing transatlantic views of nature were utterly disparate sagas of land settlement. In Britain, millennia of gradual

A black-billed darter from Audubon's *Birds of America*, 1836. Audubon had difficulty obtaining subscriptions from Americans. The first came from the House of Representatives in 1830.

occupance and cultivation had domesticated most of the countryside; by the nineteenth century almost the whole realm was within easy reach of a public long at home in it. By contrast, Americans were still immersed in the pioneering task of carving out homes and livelihoods in a vast, raw and menacing wilderness. The Indian imprint was dismissed as sparse, episodic, impermanent. The nature Americans were speedily taming was no vista of contemplative delight but an alien abomination to be eradicated and replaced with well-tended scenes of human endeavour. Wilderness was not only a physical impediment to civilised progress, it was aesthetically repulsive and morally repugnant. Americans studied it mainly to learn how to extirpate it.

Loathing untouched nature, Americans loved their own improvements. George Bancroft's hugely popular *History of the United States* (1834-74) limned the gloomy menace of the Hudson River valley as found by Henry Hudson in 1607:

'Indian Pass' by Thomas Cole, 1847. The indigenous imprint on the sublime landscape of the New World was considered rudimentary and evanescent.



Frontispiece to an 1837 edition of White's popular book. In 1788 he referred to it as his 'idea of a parochial history, which ... ought to consist of natural productions and occurrences as well as antiquities'.

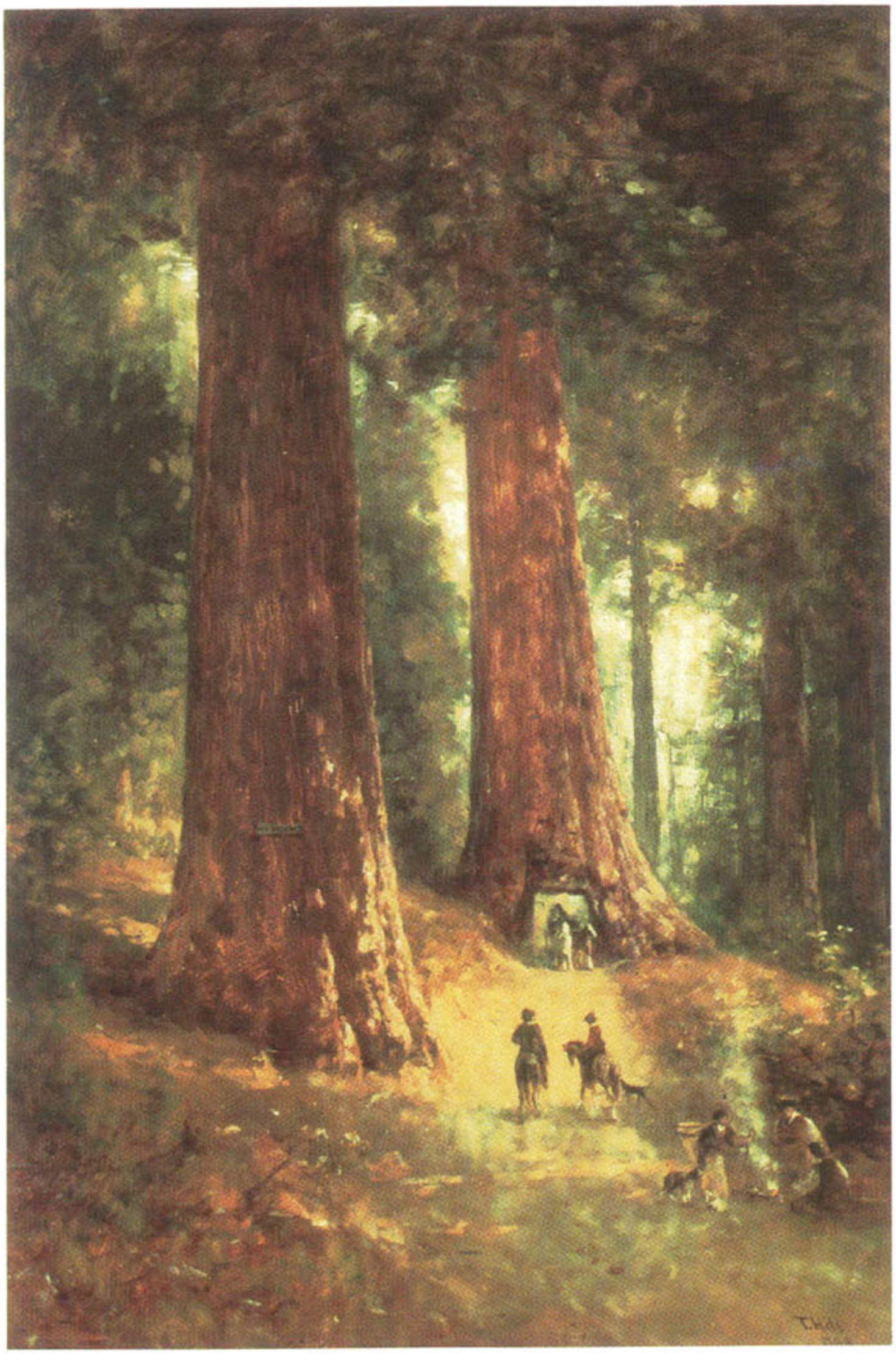
Trees might everywhere be seen breaking from their root in the marshy soil, and threatening to fall with the first rude gust; while the ground was strewn with the ruins of former forests ... Reptiles sported in the stagnant pools, or crawled unharmed over piles of mouldering trees; masses of decaying vegetation fed the exhalations with seeds of pestilence ... The horrors of corruption frowned on the fruitless fertility of uncultivated nature.

After two centuries of energetic settlement, 'how changed is the scene!' exulted Bancroft in 1837:

> The earth glows with the colors of civilization ... The thorn has given way to the rosebush; the cultivated vine clambers over rocks where the brood of serpents used to nestle; while industry smiles at the changes she has wrought, and inhales the bland air which now has health on its wings. And man is still in harmony with nature, which he has subdued, cultivated, and adorned ... Science spreads iron pathways to the recent wilderness; ...the hills yield up the shining marble and the enduring granite; ...immense rafts bring down the forests of the interior.

Americans extolled nature cleared by the axe, tamed by industry and teeming with mines and mills.

Yet they were already taking pride and finding solace in scenery more spectacular and virtuous than Old World locales *because* it was wild and untouched. In praising wilderness, poets, painters and naturalists countered critics who felt the New World lacked scenic interest for want of human history. The conventional view held that cultural impress on the New World was rudimentary, art-



less, too recent to have mellowed the garish profusion of nature. In Ruskin's archetypal aesthetic rebuke:

> The charm of romantic association – [of] ruins and traditions, the remains of architecture, the traces of battlefields, the precursorship of eventful history – can be felt only by the European. The instinct to which it appeals can hardly be felt in America.

With this reproach some Americans were in reluctant accord. The need to deny, palliate, or make up for the thinness of New World culture and to mount counter-claims of glory for New World scenery long shaped how America was viewed and portrayed. Home from European tours, a number of American writers and painters bemoaned their own raw, unfinished land. Lack of 'a pictured, illuminated Past', judged the historian John Lothrop Motley, left America with 'a naked and impoverished appearance'. All new, it was too bare to live in; 'it wants the associations of tradition which are the soul and interest of scenery'.

Patriots refuted such effete conclusions. The grandeur of natural landscapes more than compensated for any lack of human impress. Americans replaced storied scenes with landscapes older than the human past, untainted by human folly and crime, morally superior to history's stage sets. 'Our mountain fastnesses and trackless plains [boast] ruins of architecture and statuary not one whit behind the foreign remains of forty centuries in power of execution', exulted Fitz Hugh Ludlow, 'and far vaster in age and size'.

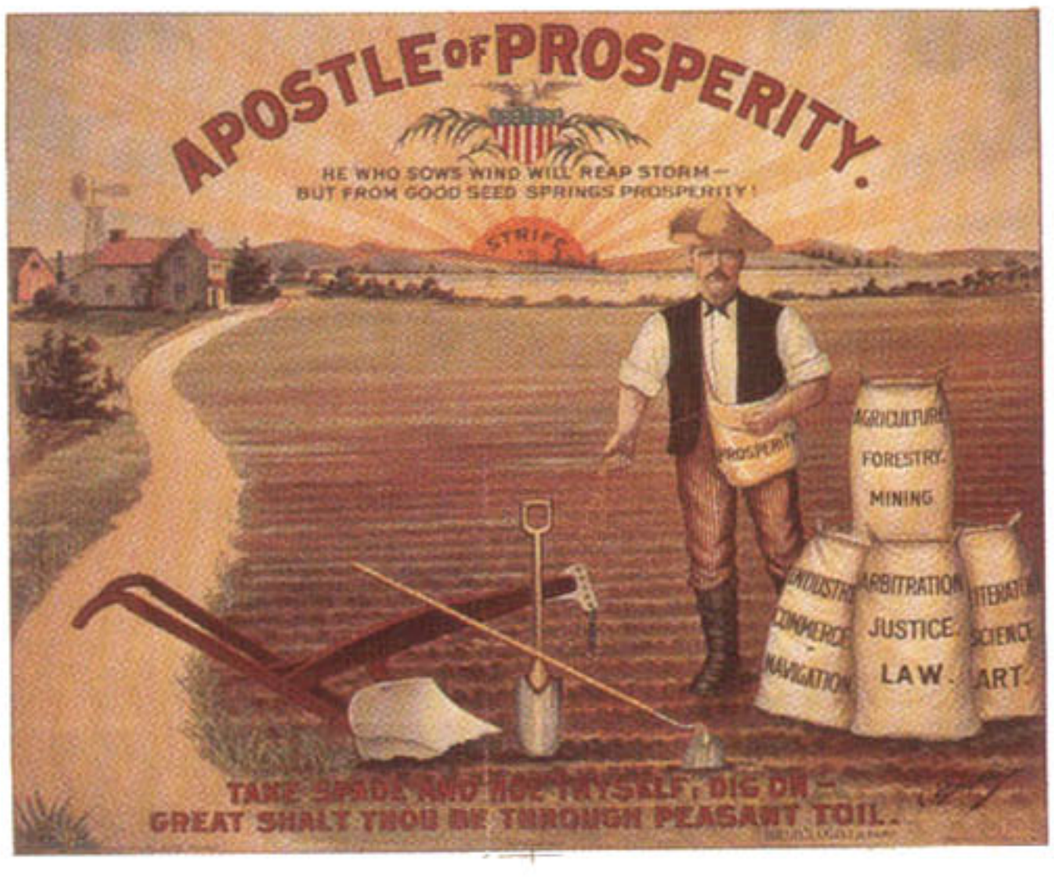
Preferring the 'hoary oak' to the 'mouldering column', Americans contrasted Europe's 'towers in which feudal oppression has fortified itself' with New World 'deep forests which the eye of God has alone pervaded'. American nature bested the monuments of Europe, declared the historian Frederick Jackson Turner in 1884. His countrymen needed no 'artificial' palaces and cathedrals, for

> In America we have giant cathedrals, whose spires are moss-clad pines, whose frescos are painted on the sky and mountain wall, and whose music surges through the leafy aisles in the deep toned bass of cataracts.

God built best. 'Fresher from the hand of him that made it', American nature evoked 'unity and immensity, and abstracting the mind from ... human agency, carried it up to the idea of a mightier power'.

Americans became concerned to protect their God-given natural munificence. Following the sombre portents in George Perkins Marsh's *Man and Nature* (1864), they progressed from exploring and admiring to preserving and protecting – from caring *about* to caring *for* – nature. The ardent crusade to preserve wilderness

Nature's nation: untamed or harnessed, the natural landscape was a defining factor in the evolution of a north American sense of nationhood. (Above, the Redwoods by Thomas Hill, 1899; below, Theodore Roosevelt poster, 1903).

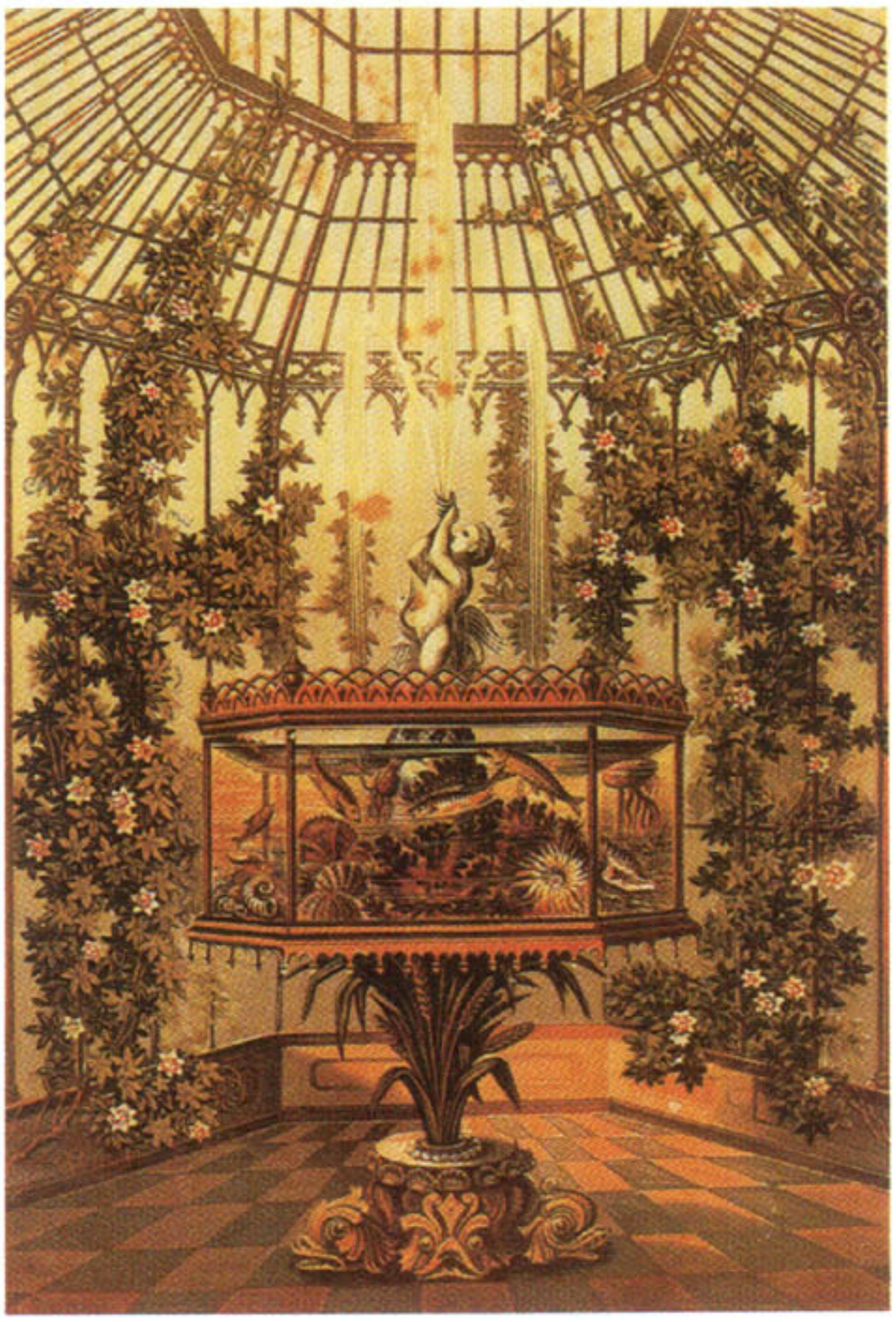


was a stunning volte-face from Americans' previous deliberate destruction of it. Indeed, the prime impulse behind the campaign to save nature, and expressly to husband wilderness, was aghast awareness of its imminent disappearance, in tandem with conscience-stricken guilt at their forebears' rapacity and greed. The much-heralded closing of the American frontier, the engrossment of virtually all public lands by settlers and corporate interests, the clear-cutting of vast forest tracts and the looming dearth of timber supplies, the damming of rivers for reservoirs and their channelling for power and irrigation, all lent force to voices urging caution in exploiting resources, and the setting aside of dwindling unspoiled tracts for recreation and spiritual renewal.

Transatlantic nature concerns thus diverged. Americans gained domestic environmental control a full century later and far less securely than Britons, and became much more ambivalent about the wisdom of having done so. British nature lovers revelled in enjoyment of almost the whole of their humanised terrain; Americans confined their devotion to a handful of imperilled remnants of unsullied nature, sacred reserves to be venerated by millions yet left alone – a management contradiction only later to become apparent. Remote by definition and in geographical reality, the nature Americans most admired was in places visited only on special occasions, if at all. American fears of wholesale species extinction, triggered by the loss of the passenger pigeon and the precipitous decline of bison, conjoined humanitarians and sports hunters in a way without parallel in Britain. Only rarely did transatlantic interests converge, as in the late 1880s when American and British bird protection societies together halted the use of plumage for ladies' hats. To be sure, British conservators urged environmental reform in far-flung imperial lands – India, South Africa, the Antipodes – where wood and water shortages, erosion, and habitat devastation aroused professional alarm. But as a popular domestic cause, nature conservation was long primarily American.

Far more than Britons, Americans stressed the uniqueness of their national realm: love of nature equated with love of country, and America was nature's nation, transcendently glorious because fresh from the Creator's hand. 'Wilderness is one great tongue, inciting to love of the Supreme Maker, Benefactor, Father', intoned an 1860 celebrant. 'Here, with the grand forest for our worshipping temple, we behold Him face to face'. Far more rugged than English 'muscular Christians', macho American outdoorsmen gained 'Rough Rider' president Theodore Roosevelt's 1910 'strenuous life' accolade:

> ... the virility, clear-sighted common sense, and resourcefulness of the American people is due to the fact that we have been a nation of hunters and frequenters of the forest, plains, and waters.



Every home should have one: an aquarium and conservatory, from Cassell's *Household Guide*, c.1870.

Victorian natural history now seems outdated in philosophy, perfervid in its piety. Yet its fusion of art and science rebukes a modern era that fails to bridge C.P. Snow's two cultures. When Victorian naturalists exalted geography and geology as amateur callings open to all, narrow specialisation was already becoming a bugbear; but earth science today is still more remote from the everyday concerns of ordinary people. The jargon of academics, the anti-intellectualism of the populace, and the indifference of specialist and layman alike to the integrative humanist tradition deprive our age of the enthusiastic vitality and utilitarian zeal of earlier naturalists on both sides of the Atlantic. By knowing and controlling nature, men bettered their physical lot, gaining the leisure needed to cultivate minds and morals. They conjoined faith in the promised advances of science with devotion to the art and poetics of nature. In the spirit of Humboldt they lauded the fusion of intellect and feeling as essential to a true apprehension of the globe.

FOR FURTHER READING

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