

Notes

Introduction

1. Donald Worster, interview by Hal K. Rothman, February 26, 1996; Aldo Leopold, *Sand County Almanac* (New York: Oxford University Press, 1949), 129–33.
2. Despite this boom in ecological awareness, scholars nonetheless encountered continued resistance to their work in an as yet unestablished academic subdiscipline. Alfred Crosby discovered this reality when he submitted the book manuscript of *The Columbian Exchange: The Biological and Cultural Consequences of 1492* for publication in the early 1970s. Legend has it that he approached more than twenty publishers before he found one, Greenwood Press, willing to risk its publication. Crosby and Greenwood have had the last laugh: *The Columbian Exchange* remains a standard not only for a full range of historians, but for scholars throughout the humanities and sciences.
3. Worster, interview.
4. John Opie, "The View from Pittsburgh (and Canyonlands)," *Environmental Review* (Fall 1982): 2–4.
5. *Environmental Review* became *Environmental History Review* in 1990 with the publication of vol. 14, no. 1–2, a name change designed to represent better "the contents of the journal to our readers, researchers and libraries, as well as potential authors, and a wider audience." The title changed again in 1996, when the ASEH and the Forest History Society combined their publications, *EHR* and *Forest & Conservation History*, into the new *Environmental History*, edited by Hal Rothman. Commentaries on these changes and other relevant issues can be found in J. Donald Hughes, "Editorial," *Environmental Review* (Summer 1983): 133–34; William Robbins, "Editorial" (Spring 1986): 1–2; Hal K. Rothman, "Editorial," *Environmental History* (January 1996): 6.

The Ecology of Order and Chaos, by Donald Worster

1. Paul Sears, *Deserts on the March*, 3rd ed. (Norman: University of Oklahoma Press, 1959), 162.
2. *Ibid.*, 177.
3. Donald Worster, *Nature's Economy: A History of Ecological Ideas* (New York: Cambridge University Press, 1977).
4. This is the theme in particular of Clements's book *Plant Succession* (Washington, D.C.: Carnegie Institution, 1916).
5. Worster, *Nature's Economy*, 210.
6. Clements's major rival for influence in the United States was Henry Chandler Cowles of the University of Chicago, whose first paper on ecological succession appeared in 1899. The best study of Cowles's ideas is J. Ronald Engel, *Sacred Sands: The Struggle for Community in the Indiana Dunes* (Middletown, Conn.: Wesleyan University Press, 1983), 137–59. Engel describes him as having a less de-

terministic, more pluralistic notion of succession, one that "opened the way to a more creative role for human beings in nature's evolutionary adventure" (150). See also Ronald C. Tobey, *Saving the Prairies: The Life Cycle of the Founding School of American Plant Ecology, 1895-1955* (Berkeley: University of California, 1981).

7. Sears, 142.

8. This book was co-authored with his brother Howard T. Odum, and it went through two more editions, the last appearing in 1971.

9. Eugene P. Odum, *Fundamentals of Ecology* (Philadelphia: W.B. Saunders, 1971), 9.

10. Odum, "The Strategy of Ecosystem Development," *Science* 164 (18 April 1969): 266.

11. The terms "K-selection" and "r-selection" came from Robert MacArthur and Edward O. Wilson, *Theory of Island Biogeography* (Princeton: Princeton University Press, 1967). Along with Odum, MacArthur was the leading spokesman during the 1950s and 1960s for the view of nature as a series of thermodynamically balanced ecosystems.

12. Odum, "Strategy of Ecosystem Development," 266. See also Odum, Trends Expected in Stressed Ecosystems, *BioScience* 35 (July/August 1985): 419-22.

13. A book of that title was published by Earl F. Murphy, *Governing Nature* (Chicago: Quadrangle Books, 1967). From time to time, Eugene Odum himself seems to have caught that ambition or lent his support to it, and it was certainly central to the work of his brother, Howard T. Odum. On this theme see Peter J. Taylor, "Technocratic Optimism, H. T. Odum, and the Partial Transformation of Ecological Metaphor after World War II," *Journal of the History of Biology* 21 (Summer 1988): 213-44.

14. A very influential popularization of Odum's view of nature (though he is never actually referred to in it) is Barry Commoner's *The Closing Circle: Nature, Man, and Technology* (New York: Alfred A. Knopf, 1971). See in particular the discussion of the four "laws" of ecology, 33-46.

15. Communication from Malcolm Cherratt, *Ecology* 70 (March 1989): 41-42.

16. See Michael Begon, John L. Harper, and Colin R. Townsend, *Ecology: Individuals, Populations, and Communities* (Sunderland, Mass.: Sinauer, 1986). In another textbook, Odum's views are presented critically as the traditional approach: R. J. Putnam and S. D. Wratten, *Principles of Ecology* (Berkeley: University of California Press, 1984). More loyal to the ecosystem model are Paul Ehrlich and Jonathan Roughgarden, *The Science of Ecology* (New York: Macmillan, 1987); and Robert Leo Smith, *Elements of Ecology*, 2nd ed. (New York: Harper & Row, 1986), though the latter admits that he has shifted from an "ecosystem approach" to more of an "evolutionary approach" (xiii).

17. William H. Drury and Ian C. T. Nisbet, "Succession," *Journal of the Arnold Arboretum* 54 (July 1973): 360.

18. H. A. Gleason, "The Individualistic Concept of the Plant Association," *Bulletin of the Torrey Botanical Club* 53 (1926): 25. A later version of the same article appeared in *American Midland Naturalist* 21 (1939): 92-110.

19. Joseph H. Connell and Ralph O. Slatyer, "Mechanisms of Succession in Natural Communities and Their Role in Community Stability and Organization," *The American Naturalist* 111 (November/December 1977): 1119-44.

20. Margaret Bryan Davis, "Climatic Instability, Time Lags, and Community Disequilibrium," in *Community Ecology*, ed. Jared Diamond and Ted J. Case (New York: Harper & Row, 1986), 269.

21. James R. Karr and Kathryn E. Freemark, "Disturbance and Vertebrates: An Integrative Perspective," *The Ecology of Natural Disturbance and Patch Dynamics*, eds. S. T. A. Pickett and P. S. White (Orlando, Fla.: Academic Press, 1985), 154-55. The Odum school of thought is, however, by no means silent. Another recent compilation has been put together in his honor, and many of its authors express a continuing support for his ideas: L. R. Pomeroy and J. J. Alberts, eds., *Concepts of Ecosystem Ecology: A Comparative View* (New York: Springer-Verlag, 1988).

22. Orië L. Loucks, Mary L. Plumb-Mentjes, and Deborah Rogers, "Gap Processes and Large-Scale Disturbances in Sand Prairies," *ibid.*, 72-85.

23. For the rise of population ecology see Sharon E. Kingsland, *Modeling Nature: Episodes in the History of Population Ecology* (Chicago: University of Chicago Press, 1985).

24. An influential exception to this tendency is F. H. Bormann and G. E. Likens, *Pattern and Process in a Forested Ecosystem* (New York: Springer-Verlag, 1979), which proposes in chap. 6 the mod-

el of a "shifting mosaic steady-state." See also P. Yodzis, "The Stability of Real Ecosystems," *Nature* 289 (19 February 1981): 674-76.

25. Paul Colinvaux, *Why Big Fierce Animals Are Rare: An Ecologist's Perspective* (Princeton: Princeton University Press, 1978), 117, 135.

26. Thomas Söderqvist, *The Ecologists: From Merry Naturalists to Saviours of the Nation: A Sociologically Informed Narrative Survey of the Ecologization of Sweden, 1895-1975* (Stockholm: Almqvist & Wiksell International, 1986), 281.

27. This argument is made with great intellectual force by Ilya Prigogine and Isabelle Stengers, *Order Out of Chaos: Man's New Dialogue with Nature* (Boulder: Shambala/New Science Library, 1984). Prigogine won the Nobel Prize in 1977 for his work on the thermodynamics of nonequilibrium systems.

28. An excellent account of the change in thinking is James Gleick, *Chaos: The Making of a New Science* (New York: Viking, 1987). I have drawn on his explanation extensively here. What Gleick does not explore are the striking intellectual parallels between chaotic theory in science and post-modern discourse in literature and philosophy. Post-Modernism is a sensibility that has abandoned the historic search for unity and order in nature, taking an ironic view of existence and debunking all established faiths. According to Todd Gitlin, "Post-Modernism reflects the fact that a new moral structure has not yet been built and our culture has not yet found a language for articulating the new understandings we are trying, haltingly, to live with. It objects to all principles, all commitments, all crusades—in the name of an unconscious evasion." On the other hand, and more positively, the new sensibility leads to emphasis on democratic coexistence: "a new 'moral ecology'—that in the preservation of the other is a condition for the preservation of the self." Gitlin, "Post-Modernism: The Stenography of Surfaces," *New Perspectives Quarterly* 6 (Spring 1989): 57, 59.

29. The paper was published in *Science* 186 (1974): 645-47. See also Robert M. May, "Simple Mathematical Models with Very Complicated Dynamics," *Nature* 261 (1976): 459-67. Gleick discusses May's work in *Chaos*, 69-80.

30. W. M. Schaeffer, "Chaos in Ecology and Epidemiology," in *Chaos in Biological Systems*, eds. H. Degan, A. V. Holden, and L. F. Olsen (New York: Plenum Press, 1987), 233. See also Schaeffer, "Order and Chaos in Ecological Systems," *Ecology* 66 (February 1985): 93-106.

31. John Muir, *My First Summer in the Sierra* (1911; Boston: Houghton Mifflin, 1944), 157.

32. Prigogine and Stengers, 312-13.

33. Much of the alarm that Sears and Odum, among others, expressed has shifted to a global perspective, and the older equilibrium thinking has been taken up by scientists concerned about the geo- and biochemical condition of the planet as a whole and about human threats, particularly from the burning of fossil fuels, to its stability. One of the most influential texts in this new development is James Lovelock's *Gaia: A New Look at Life on Earth* (Oxford: Oxford University Press, 1979). See also Edward Goldsmith, "Gaia: Some Implications for Theoretical Ecology," *The Ecologist* 18, nos. 2 and 3 (1988): 64-74.

The Theoretical Structure of Ecological Revolutions, by Carolyn Merchant

1. Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 2d ed. (Chicago, 1970). The theory and illustrations presented here are drawn from my *Ecological Revolutions: Nature, Gender, and Science in New England*.

2. Karl Marx, "Preface to A Contribution to the Critique of Political Economy," (1859) in Karl Marx and Friedrich Engels, *Selected Works* (New York, 1968), 182-83.

3. Elizabeth Ann R. Bird, "The Social Construction of Nature: Theoretical Approaches to the History of Environmental Problems," *Environmental Review* 11 (Winter 1987); Karin D. Knorr-Cetina and Michael Mulkay, eds., *Science Observed: Perspectives on the Social Study of Science* (Beverly Hills, 1983); and Karin D. Knorr-Cetina, *The Manufacture of Knowledge: An Essay on the Constructivist and Contextual Nature of Science* (New York, 1981).

4. Claude Meillassoux, *Maidens, Meal, and Money: Capitalism and the Domestic Community* (1975; English trans., Cambridge, 1981). Critiques of Meillassoux include Bridget O'Laughlin, "Production

and Reproduction: Meillassoux's *Femmes, Greniers et Capitaux*," *Critique of Anthropology* 2 (Spring 1977), 3-33; and Maureen Mackintosh, "Reproduction and Patriarchy: A Critique of Claude Meillassoux, *Femmes, Greniers et Capitaux*," *Capital and Class* 2 (Summer 1977), 114-27.

5. Meillassoux, *Maidens, Meal, and Money*, 36, 39.

6. Abby Peterson, "The Gender-Sex Dimension in Swedish Politics," *Acta Sociologica* 27, no. 1 (1984), 3-17. Peterson's fourfold taxonomy of political interests included (1) Issues related to the interests of intergenerational reproduction; (2) Issues related to the interests of intragenerational reproduction in the family; (3) Issues related to the interests of intragenerational reproduction in the public sector; and (4) Issues related to the interests of reproduction workers (women), i.e. so-called women's liberation issues. Peterson also applied her taxonomy to the politics of reproduction in the Swedish environmental movement. See Abby Peterson and Carolyn Merchant, "Peace With the Earth: Women and the Environmental Movement in Sweden," *Women's Studies International Forum* 9 (1986), 465-79, esp. 472-74.

7. Renaté Bridenthal, "The Dialectics of Production and Reproduction in History," *Radical America* 10 (March-April 1976), 3-11. For a feminist analysis of reproduction in American culture, see Women's Work Study Group, "Loom, Broom, and Womb: Producers, Maintainers, and Reproducers," *Radical America* 10 (March-April 1976), 29-45; and Veronica Beechley, "On Patriarchy," *Feminist Review* 10 (March-June 1980), 169-88.

8. Charles Taylor, "Neutrality in Political Science," in Alan Ryan, ed., *The Philosophy of Social Explanation* (London, 1973), 139-70, see 144-46, 154-55.

9. On mimetic, participatory consciousness, see Morris Berman, *The Reenchantment of the World* (Ithaca, 1981); Eric Havelock, *Preface to Plato* (Cambridge, Mass., 1963); and Max Horkheimer, *The Eclipse of Reason* (New York, n.d.), 92-127. On the gaze, see *Compact Oxford English Dictionary*, s.v. "gaze": "said of a deer, also of persons, especially in wonder, expectancy, bewilderment." "The hart, stag, buck, or hind when borne in coat-armour, looking affrontée or full faced is said to be at gaze . . . but all other beasts in this attitude are called guardant." William Berry, *Encyclopedia heraldica*, s.v. "gaze." On the Koyukon Indian versus white methods of hunting the deer, see Richard K. Nelson, "The Gifts," in Daniel Halpern, ed., *Antaeus*, no. 57 (Autumn, 1986), 117-31, esp. 122. On imitation of animals by humans in hunting, see Randall L. Eaton, "Hunting and the Great Mystery of Nature," *Utne Reader* (January/February 1987), 42-49.

10. On the dominance of vision in Western consciousness see Hans Jonas, "The Nobility of Sight," *Philosophy and Phenomenological Research* 14 (1954), 507-19; Evelyn Fox Keller and Christine Grontkowski, "The Mind's Eye," in Sandra Harding and Merrill B. Hintikka, eds., *Discovering Reality* (Dordrecht, Holland, 1983), 207-24; James Axtell, "The Power of Print in the Eastern Woodlands," *William and Mary Quarterly* 44 (2) 3rd ser. (April 1987), 300-09.

The Trouble with Wilderness: Or, Getting Back to the Wrong Nature, by William Cronon

1. Henry David Thoreau, "Walking," *The Works of Thoreau*, ed. Henry S. Canby (Boston: Houghton-Mifflin, 1937), 672.

2. Entry on "wilderness," *Oxford English Dictionary*; see also Roderick Nash, *Wilderness and the American Mind*, 3rd ed. (New Haven: Yale University Press, 1967, 1982), 1-22. For other important discussions of the history of wilderness, see Max Oelschlaeger, *The Idea of Wilderness: From Prehistory to the Age of Ecology* (New Haven: Yale University Press, 1991).

3. Exodus, 32:1-35, KJV.

4. Exodus, 14:3, KJV.

5. Mark 1:12-13 KJV; see also Matthew, 4:1-11; and Luke, 4:1-13.

6. John Milton, "Paradise Lost," *John Milton: Complete Poems and Major Prose*, ed. Merrit Y. Hughes (New York: Odyssey Press, 1957), 280-81, lines 131-42.

7. I have discussed this theme at length in William Cronon, "Landscapes of Abundance and Scarcity," in Clyde Milner, et al., eds., *Oxford History of the American West* (New York: Oxford University Press, 1994), 603-37. The classic work on the Puritan "city on a hill" in colonial New

England is Perry Miller, *Errand Into the Wilderness* (Cambridge, Mass.: Harvard University Press, 1956).

8. John Muir, *My First Summer in the Sierra* (1911), reprinted in *John Muir: The Eight Wilderness Discovery Books* (London: Diadem; Seattle: The Mountaineers, 1992), 211.

9. Alfred Runte, *National Parks: The American Experience*, 2nd ed. (Lincoln: University of Nebraska Press, 1987).

10. John Muir, *The Yosemite* (1912), reprinted in *John Muir: Eight Wilderness Discovery Books*, 715.

11. Scholarly work on the sublime is extensive. Among the most important studies are Samuel Monk, *The Sublime: A Study of Critical Theories in XVIII-Century England* (New York, 1935); Basil Willey, *The Eighteenth-Century Background: Studies on the Idea of Nature in the Thought of the Period* (London: Chatto and Windus, 1949); Marjorie Hope Nicolson, *Mountain Gloom and Mountain Glory: The Development of the Aesthetics of the Infinite* (Ithaca: Cornell University Press, 1959); Thomas Weiskel, *The Romantic Sublime: Studies in the Structure and Psychology of Transcendence* (Baltimore: Johns Hopkins University Press, 1976); and Barbara Novak, *Nature and Culture: American Landscape Painting, 1825-1875* (New York: Oxford University Press, 1980).

12. The classic works are Immanuel Kant, *Observations on the Feeling of the Beautiful and Sublime* (1764), trans. John T. Goldthwait (Berkeley: University of California Press, 1960); Edmund Burke, *A Philosophical Enquiry into the Origin of our Ideas of the Sublime and Beautiful*, ed. James T. Boulton (1958; Notre Dame: University of Notre Dame Press, 1968); and William Gilpin, *Three Essays: On Picturesque Beauty; On Picturesque Travel; and on Sketching Landscape* (London, 1803).

13. See Ann Vileisis "From Wastelands to Wetlands," unpublished senior essay, Yale University, 1989; and Alfred Runte, *National Parks*.

14. William Wordsworth, "The Prelude," Book VI, in Thomas Hutchinson, ed. *The Poetical Works of Wordsworth* (London: Oxford University Press, 1936), 536.

15. Henry David Thoreau, *The Maine Woods* (1864), in *Henry David Thoreau* (New York: Library of America, 1985), 640-41.

16. Exodus 16:10.

17. John Muir, *My First Summer in the Sierra* (1911), in *John Muir: The Eight Wilderness Discovery Books* (Seattle: The Mountaineers, 1992), 238. Part of the difference between these descriptions may reflect the landscapes the three authors were describing. In his essay elsewhere in this book, Kenneth Olwig notes that early American travelers experienced Yosemite as much through the aesthetic tropes of the pastoral as through those of the sublime. The ease with which Muir celebrated the gentle divinity of the Sierra Nevada had much to do with the pastoral qualities of the landscape he described.

18. Frederick Jackson Turner, *The Frontier in American History* (New York: Henry Holt, 1920), 37-38.

19. Richard Slotkin has made this observation the linchpin of his comparison between Turner and Theodore Roosevelt. See Slotkin, *Gunfighter Nation: The Myth of the Frontier in Twentieth-Century America* (New York: Atheneum, 1992), 29-62.

20. Owen Wister, *The Virginian: A Horseman of the Plains* (New York: Macmillan, 1902), viii-ix.

21. Theodore Roosevelt, *Ranch Life and the Hunting Trail* (1888; New York: Century, 1899), 100.

22. Wister, *Virginian*, x.

23. On the many problems with this view, see William M. Denevan, "The Pristine Myth: The Landscape of the Americas in 1492," *Annals of the Association of American Geographers* 82 (1992), 369-85.

24. Wilderness also lies at the foundation of the Clementsian ecological concept of the climax.

25. On the many paradoxes of having to manage wilderness into order to maintain the appearance of an unmanaged landscape, see John C. Hendee, et al., *Wilderness Management*, USDA Forest Service Miscellaneous Publication No. 1365 (Washington, D.C.: Government Printing Office, 1978).

26. This argument has been powerfully made by Ramachandra Guha, "Radical American Environmentalism: A Third World Critique," *Environmental Ethics* 11 (1989), 71-83.

27. Bill McKibben, *The End of Nature* (New York: Random House, 1989).

28. McKibben, *End of Nature*, 49.

29. Even comparable extinction rates have occurred before, though we surely would not want to emulate the Jurassic-Cretaceous boundary extinctions as a model for responsible manipulation of the biosphere!

30. Dave Foreman, *Confessions of an Eco-Warrior* (New York: Harmony Books, 1991), 69; italics in original. For a sampling of other writings by followers of deep ecology and/or Earth First!, see Michael Tobias, ed., *Deep Ecology* (San Diego: Avant Books, 1984); Bill Devall and George Sessions, *Deep Ecology* (Salt Lake City: Gibbs M. Smith, 1985); Michael Tobias, *After Eden: History, Ecology, and Conscience* (San Diego: Avant Books, 1985); Dave Foreman and Bill Hayward, eds., *Ecodefense: A Field Guide to Monkey Wrenching*, 2nd ed. (Tucson: Ned Ludd Books, 1987); Bill Devall, *Simple in Means, Rich in Ends: Practicing Deep Ecology* (Salt Lake City: Gibbs Smith, 1988); Steve Chase, ed., *Defending the Earth: A Dialogue Between Murray Bookchin & Dave Foreman* (Boston: South End Press, 1991); John Davis, ed., *The Earth First! Reader: Ten Years of Radical Environmentalism* (Salt Lake City: Gibbs Smith, 1991); Bill Devall, *Living Richly in an Age of Limits: Using Deep Ecology for an Abundant Life* (Salt Lake City: Gibbs Smith, 1993); and Michael E. Zimmerman, et al., eds., *Environmental Philosophy: From Animal Rights to Deep Ecology* (Englewood Cliffs, N.J.: Prentice-Hall, 1993). A useful survey of the different factions of radical environmentalism can be found in Carolyn Merchant, *Radical Ecology: The Search for a Livable World* (New York: Routledge, 1992). For a very interesting critique of this literature (first published in the anarchist newspaper *Fifth Estate*), see George Bradford, *How Deep is Deep Ecology?* (Ojai, Calif.: Times Change Press, 1989).

31. Foreman, *Confessions of an Eco-Warrior*, 34.

32. *Ibid.*, 65. See also Dave Foreman and Howie Wolke, *The Big Outside: A Descriptive Inventory of the Big Wilderness Areas of the U.S.* (Tucson: Ned Ludd Books, 1989).

33. Foreman, *Confessions of an Eco-Warrior*, 63.

34. Foreman, *Confessions of an Eco-Warrior*, 27.

35. It is not much of an exaggeration to say that the wilderness experience is essentially consumerist in its impulses.

36. Muir, "Yosemite," in John Muir, *Eight Wilderness Discovery Books*, 714.

37. Wallace Stegner, ed., *This Is Dinosaur: Echo Park Country and Its Magic Rivers* (New York: Alfred A. Knopf, 1955), 17; emphasis in original.

38. Katherine Hayles helped me see the importance of this argument.

39. Analogous arguments can be found in John Brinckerhoff Jackson, "Beyond 'Wilderness,'" *A Sense of Place, a Sense of Time* (New Haven: Yale University Press, 1994), 71-91; and in the wonderful collection of essays by Michael Pollan, *Second Nature: A Gardener's Education* (New York: Atlantic Monthly Press, 1991).

40. Wendell Berry, *Home Economics* (San Francisco: North Point, 1987), 138, 143.

41. Gary Snyder, quoted in the *New York Times*, "Week in Review," 6.

The Earliest Cultural Landscapes of England, by I. G. Simmons

1. The classic though dated account is W. G. Hoskins, *The Making of the English Landscape* (Harmondsworth, 1970). See also M. Jones, *England Before Domesday* (London, 1981).

2. A new series on landscape history largely by systematic topic is being edited by Michael Read at the Loughborough University of Technology. The first to appear is L. Cantor, *The Changing English Countryside, 1400-1700* (London, 1987). Most standard historical geographies have allusions to landscape. See H. C. Darby, ed., *A New Historical Geography of England* (Cambridge, 1973).

3. A standard prehistory is P. Phillips, *The Prehistory of Europe* (London, 1980); but see also interpretations by R. Bradley, *The Prehistoric Settlement of Britain* (London, 1978); and the environmental context in I. G. Simmons and M. J. Tooley, eds., *The Environment in British Prehistory* (London, 1981).

4. A summary of vegetation changes is in R. G. West, "Pleistocene Forest History in East Anglia," *New Phytologist* 85 (1980), 571-622; detail in R. G. West, "The Quaternary Deposits at Hoxne, Suffolk," *Philosophical Transactions of the Royal Society B* 239 (1965), 265-356; C. Turner, "The Middle Pleistocene Deposits at Mark's Tey, Essex," *Philosophical Transactions of the Royal Society B* 257 (1970), 373-437.

5. C. Turner, "Der Einschluß großer Mammalier auf die interglaziale Vegetation," *Quartärpaläontologie* 1 (1975), 13-19.

6. See A. Morrison, *Early Man in Britain and Ireland* (London, 1980); D. A. Roe, *The Lower and Middle Palaeolithic Period in Britain* (London, 1981); and J. J. Wymer, *The Palaeolithic Age* (London, 1982).

7. J. B. Campbell, *The Upper Palaeolithic of Britain: A Study of Man and Nature in the Pleistocene*, 2 vols. (Cambridge, 1977).

8. I. G. Simmons, G. W. Dimbleby, and C. Grigson, "The Mesolithic," in Simmons and Tooley, eds., *The Environment in British Prehistory*, 82-124.

9. The classic site of Star Carr (in the vicinity of which new excavations by T. Schadla-Hall and by P. Mellars will certainly amplify the evidence) is in J. G. D. Clark et al., *Excavations at Star Carr: An Early Mesolithic Site at Seamer, Near Scarborough* (Cambridge, 1954), and *Star Carr: A Case Study in Bioarchaeology* (Reading, Mass., 1972). There have been many subsequent reinterpretations of the site by other authors.

10. A. G. Smith, "The Influence of Mesolithic and Neolithic Man on British Vegetation," in D. Walker and R. G. West, eds., *Studies in the Vegetational History of the British Isles* (Cambridge, 1970), 81-96; and "Newferry and the Boreal-Atlantic Transition," *New Phytologist* 98 (1984), 35-55.

11. Two summary papers are I. G. Simmons and J. B. Innes, "Late Mesolithic Land-Use and Its Impact in the English Uplands," *Biogeographical Monographs* 2 (1985), 7-17, and "Mid-Holocene Adaptations and Later Mesolithic Forest Disturbance in Northern England," *Journal of Archaeological Science* 14 (1987), 385-403.

12. The quotation I have in mind runs, "De foist time is happenstance, de second is coincidence, de toid time is enemy action." I regret I have been unable to verify the reference to this useful piece of probability theory.

13. I. G. Simmons, "Late Mesolithic Societies and the Environment of the Uplands of England and Wales," *Bulletin of the Institute of Archaeology, London* 16 (1979), 111-29; P. Mellars, "Fire Ecology, Animal Populations and Man: A Study of Some Ecological Relationships in Prehistory," *Proceedings of the Prehistoric Society* 42 (1976), 14-45.

14. R. Jacobi, J. H. Tallis, and P. Mellars, "The Southern Pennine Mesolithic and the Ecological Record," *Journal of Archaeological Science* 3 (1976), 307-20; I. G. Simmons and J. B. Innes, "Tree Remains in a North York Moors Peat Profile," *Nature, London* 294 (1981), 74-78.

15. See the discussion in R. Dennell, *European Economic Prehistory* (London, 1983).

16. I will, on request, send potential visitors a list of places from which to stand and stare.

Landschaft and Linearity, by John R. Stilgoe

1. On archetypes see C. G. Jung, *The Archetypes and the Collective Unconscious*, trans. R. F. C. Hull (Princeton: Princeton University Press, 1969), 1-36; Jung mentions spatial archetypes in *Mandala Symbolism*, trans. R. F. C. Hull (Princeton: Princeton University Press, 1969), 93-94.

2. For other definitions see Robert E. Dickinson, "Landscape and Society," *The Scottish Geographical Magazine* 55 (January 1939), 1-15; J. B. Jackson, "The Meaning of 'Landscape,'" *Kultur-geograf* 88 (1965), 47-50; Josef Schmithusen, "Was ist eine Landschaft?" *Erkundliches Wissen* 9 (1964), 7-24; and Gabriele Schwarz, *Allgemeine Siedlungsgeographie* (Berlin: Walter de Gruyter, 1966), 162-220. Perhaps the most comprehensive analysis of the medieval *landschaft* is found in three works by Karl Siegfried Bader: *Das Mittelalterliche Dorf als Friedens- und Rechtsbereich* (Weimar: Bohlaus, 1957); *Dorfgenossenschaft und Dorfgemeinde* (Köln: Bohlaus, 1962); and *Rechtsformen und Schichten der Liegenschaftsnutzung im Mittelalterlichen Dorf I* (Wein: Bohlaus, 1973).

3. Stephen Miller, "Politics and Amnesty International," *Commentary* 65 (March 1978), 58.

4. *Oxford English Dictionary* (New York: Oxford University Press, 1971), I, 1566-67.

5. Robert Coles, "Telic Reforms," *The New Yorker* 54 (March 13, 1978), 141.

6. *OED*, II, 3630-31.

7. John Conron, ed., *American Landscapes* (New York: Oxford University Press, 1971).

8. Henry James, *The American Scene* (New York: Harper and Brothers, 1970), v-vi; hereafter cited as James.