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An Enthusiastic Second

Alfred W. Crosby

Donald Worster and I have a history of agreeing on nearly everything except the positive qualities of New England winters, and "Transformations of the Earth" continues the pattern. I can think of no area of research in which historians have greater personal opportunities and can make greater contributions to the general weal than in the history of what he and others have called the "agroecosystem." The attention of most humans, and scholars, too, has been fixed on the triumphs won and the damage wreaked by the industrial revolution, a recent event in the history of *Homo sapiens*. Agriculture, a Neolithic development, has been altering the biosphere for a lot longer than the industrial revolution, and, one could argue, continues to make greater changes. Consider what has happened in the steppelands of Eurasia, the Americas, South Africa, and Australia in the last five or so human generations: a transformation of an ecosystem with its eggs in ten thousand baskets into what a hyperbolizing botanist in the midst of the rolling grain fields of Washington's Palouse once denounced to me as "wheat desert." Consider the role of ranchers and farmers in the current transformation of our tropical forests. Entrepreneurs and slash-and-burn farmers are destroying the indigenous biota and replacing it with a shoddy of exotic herd animals, grasses, and crops—or with everlasting laterite.

Once the rocks of Zacatecas and Potosí and the Sierra Nevada contained silver for the easy taking, but now most of it is all mined out. Once the soil of the bottomlands of the world's rivers was deep and darkly fertile and aquifers brimmed beneath the grasslands. We have mined these loams and Pleistocene waters as if they were of no more lasting utility than the silver. Now we stimulate and simulate fertility with fertilizers made from our decreasing supply of petroleum. We manage the problem of the sinking water tables by buying bigger pumps (usually driven, directly or indirectly, by burning fossil fuels) and, ultimately, by going bankrupt and moving on, a behavior that Frederick Jackson Turner (and, just conceivably, Oswald Spengler) would recognize as familiar. In contrast, we have, for instance, the traditional rice paddy system of southern China, with its sustained and astonishing productivity in rice, vegetables, algae, oysters, carp, pigs, chickens, ducks, and frogs.¹

Agroecological history deserves attention and has had little. It is too large a subject, too long in duration, and for the most part the product of the boring, any-

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¹ René Dubos, *The Resilience of Ecosystems: An Ecological View of Environmental Restoration* (Boulder, 1978), 17.

mous millions. Thomas Carlyle would have had no interest in it, though the spread of potatoes and lazy bed cultivation certainly had a greater effect on the demography and the physical condition of actual Ireland than his hero, Oliver Cromwell.² But history is not all or even mostly biography, and if we must live *here*—and there is, for the very long time being, no likely *there* to go to—then we should take an interest in the nest we are building, strengthening, dismantling, and fouling *here*.

And who better than historians to take up the task? In truth, who else is there to consider it in its largest and most important dimensions? The subject is huge, vague in definition, the quantity of data enormous, scattered, and most of it of a quality so low as to make a scientist weep with frustration. The geographical areas that must be considered in meaningful agroecological history have to be large. The environment of Trenton, New Jersey, for instance, may be getting better or worse—that may be no more than a matter of random chance—but what about the Delaware River valley, a unit large enough to possess a degree of ecological autonomy and significance? The periods of time involved in any worthwhile consideration of the course of agroecological history stretch vertiginously into “the dark backward and abysm of time.” Before Cromwell was born or the potato crossed the Atlantic or any north European used an alphabetic script, Bronze Age farmers in Ireland, stymied and baffled by climatic change, saw their upland farms turn into blanket bogs in spite of—often because of—their best but inappropriate efforts.³ The *longue durée* is the business of geologists and historians, and the former’s professional interest in humanity is limited. The information available to those who inquire into the history of agroecological systems is skewed by religion, ideology, economic interests, racism, pride, hatred, and every whim entertained by humanity. The information is not the kind that scientists are trained to process, but it is standard fare for historians. I again refer you to Ireland for examples: Which were kinder to its ecosystems, peasant cottagers or absentee capitalist landlords? Think before you answer. In fact, do some research. Be an agroecological historian.

Few scientists devoted to hard data and clear-cut conclusions will hazard careers in the decades of research and analysis needed to produce agroecological history. Sherburne F. Cook did so for the history of erosion in central Mexico, but he was unnaturally influenced by association with historians and, in addition, was an exception not only as a scientist but as a human being.⁴ Agronomists know more about soil than historians do, but rarely take as serious questions such historical issues as the quality of the topsoil of the Ganges floodplain in the first millennium B.C., long since strewn across the floor of the Arabian Sea. Many archaeologists are deeply interested in the agroecology of the past but are concentrating on winning their spurs as good scientists, for example, focusing on the painstaking analysis of specific sites. Zoologists know a great deal about domesticated animals, but only a few of them

² Redcliffe Salaman, *The History and Social Influence of the Potato* (Cambridge, Eng., 1985), 188–332.

³ William Shakespeare, *The Tempest*, act 1, sc. 2; Terence Reeves-Smyth and Fred Hammond, eds., *Landscape Archeology in Ireland* (Oxford, 1983), 361.

⁴ Sherburne F. Cook, *Soil Erosion in Central Mexico* (Berkeley, 1949).

have much interest in their influence in the past.⁵ They will wait until retirement's lazy semesters to inquire into the effect of feral Old World swine on the forests of eastern North America. And very few of the experts on the scientific aspects of agroecological history will have spent enough time studying the history of human society to trace connections between these two kinds of history. And no one but the brass-bottomed historian is going to be willing to spend the requisite time in the archives, nor to grapple with the handwritings and scripts, nor to endure our ancestors' fixations on subjects *we* know to be of ephemeral importance (for example, the claims of the founders of the Sung dynasty to the Heavenly Mandate, the fracas over transubstantiation versus consubstantiation, and the scandal over the Teapot Dome oil lands). Ask Donald Worster whether more words were printed about Father Charles Coughlin or the dust bowl while Oklahoma was blowing into the Atlantic.

Dedicated agroecological historians must do the usual arduous work of historians, and, in addition, they will have to surrender their pretense of expertness and will have to puzzle through monographs of a dozen sciences written in jargons sometimes as alien as those of the Mayan *Popol Vuh* or Jonathan Edwards. The universe seems chock-full of experts in esoteric disciplines, and few of them voluntarily read outside their own fields. What the world needs now—at a minimum—is gifted amateurs, intelligent generalizers, to try to make sense out of what the experts are proclaiming about matters pertinent to human survival. I am afraid that the only candidates are historians and journalists, and that the former have more patience and better training for this particular job.

The rewards for the agroecological historians will be magnificent. They will be neither old rag and bottle collectors nor panderers to popular taste. They will be doing work of great utility to society, and the better their scholarship the greater the utility. How can we know what we should be doing to encourage a healthy Chesapeake Bay—in fact, how can we know what we mean by “healthy”—if we have no exact idea of what the bay was like before industrial pollution, or before the runoff from eighteenth-century Piedmont farms?⁶ The mesquite jungles of today's Texas are robustly healthy, but so were the grasslands they have displaced in many areas since William Barret Travis met Antonio López de Santa Anna at the Alamo.⁷

We cannot know what we can ask of our environments unless we know what they are capable of providing, which will entail examining their past. Who will first write the history of the ecosystem that was once a reedy plain, a perpetually renewing congregation of ten thousand species; that then became the simplified and irrigated flats, which provided barley for Sumerian city-states; and now is nearly as simple and dead as the contents of your salt shaker?⁸ Mullahs will have to read that history book.

⁵ There are exceptions; see Juliet Clutton-Brock, *Domesticated Animals from Early Times* (Austin, 1981).

⁶ Grace C. Brush and Frank W. Davis, “Stratigraphic Evidence of Human Disturbance in an Estuary,” *Quaternary Research*, 22 (July 1984), 91–108.

⁷ “Commercial Economies,” in *Man's Role in Changing the Face of the Earth*, ed. William I. Thomas, Jr. (2 vols., Chicago, 1955), I, 428.

⁸ J. Donald Hughes, *Ecology in Ancient Civilizations* (Albuquerque, 1975), 32, 34–35.

Prophets and sages have often cursed their fellow humans for esteeming themselves godlike. Any decent agroecological historian would respond, palms uplifted, that we *are* gods, God help us, in our ability to alter the world. We are appallingly powerful, though not very respectable—more like the Greek and Roman gods than Jehovah or Allah. Apollo and Juno paid no heed to precedents nor to the interests of posterity, and Jupiter dumped his thunderbolts on the world whenever he felt packsores. We are equally irresponsible and will continue to be so until, at a minimum, we inform ourselves of what we have done to the planet since some of us intervened in natural processes and became farmers.