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THE DIRTY THIRTIES

A STUDY IN AGRICULTURAL CAPITALISM

DONALD WORSTER

"The history of any land begins with nature, and all histories must end with nature," J. Frank Dobie once wrote.¹ He was eloquently right, but until very recently such a view was not regarded seriously by academic historians, who commonly took nature for granted, beginning and ending their studies with an air of human omnipotence. That attitude, however, is becoming harder to maintain in innocence, as a group of ecologically informed historians challenge it. It is now more acceptable to say, with Dobie, that nature has played a stage-center role in the making of history—the making of its setbacks and tragedies as well as its progress and triumphs. Whether defined as climate, as vegetation, as the presence or absence of water, as soil and topography, or more compositely as ecosystem and biosphere, nature has been a force to be reckoned with in

social evolution. Many geographers and anthropologists have long acknowledged that fact. And now historical thinking, if it wants to be taken seriously, must to some extent also become ecological.²

There have been some important exceptions to the historians' neglect of environmental perspectives. Strikingly, those exceptions have come mainly out of the Great Plains. Dobie was a well-known son of this region, growing up and teaching here. So was his University of Texas associate, Walter Prescott Webb, who stitched history and environment together in his writings.³ And so was the man who, more than any other, anticipated the emerging ecological synthesis in history: James Malin of the University of Kansas. As far back as 1950 Malin was envisioning history as a process of "ecological adaptation" and was promoting the grasslands as an ideal laboratory for tracking that process.⁴ These scholars, particularly Webb and Malin, were not always clear about what they meant by adaptation—whether it was a process of yielding to natural exigencies or of surmounting them by means of technology—but they were all convinced of the profound importance of the human dialogue with nature.

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The Great Plains have uniquely had an impact on the historical imagination because conditions of settlement there have presented so stark a contrast with those in more humid American environments. But in the case of Malin there was another, more specific influence at work, riveting his attention on the earth. During the 1930s he found himself directly in the midst of the Dust Bowl, as dramatic an example of *maladaptation* as any in human ecological experience. Anyone who lived through the "dirty thirties" or the subsequent echoes of it, as he did, could hardly fail to be impressed by the relevance of environmental health to human welfare and happiness. The Dust Bowl made emphatically clear the consequences nature can have for people, the surprises she can bring to those who leave her out of their calculations.

In the traumatic years of the Dust Bowl, the Great Plains offered at once a stimulus to the rise of an ecologically oriented history and a compelling subject for historians to grapple with. My main purpose here is to move toward a cultural explanation for this disaster, one that will, when complete, be adequate to its significance and alert to its complexity. Such an explanation cannot be the work of any single individual, for it demands what no individual alone can achieve: first, a detailed, interdisciplinary investigation of the special environmental conditions of the Plains—their cycles of weather and climate, of drought and rainfall, their grassland ecosystems as a force for moderating and buffering those cycles—and, second, a probing interpretation of the cultural elements introduced here. Of course, the rubric of culture in that account will encompass the tools, the agricultural techniques, devised to make a living from nature, but more basically it must be seen to refer to the values, world views, classes, and institutions active on the Plains. Those social and mental structures have created the tools and determined how they have been used. Finally, it is in the swirling interaction of all these agencies that an adequate explanation of the Dust Bowl is to be found. Ecological history is

not monocausal. It assigns neither to nature nor to culture a sole, exclusive authority over the past, its rhythms and events.⁵

James Malin, an early advocate of the field of ecological history, attempted an explanation of the Dust Bowl experience. Or rather, he suggested a couple of explanations, both of them fragmentary and not entirely compatible with each other. Part of their weakness as history comes from Malin's bias and provinciality, which prevented him from taking a detached view of the culture he was seeking to understand. Their value, on the other hand, is that they make any simplistic alternative impossible to sustain. Though I will argue that his explanations do not satisfy the tests of evidence or logic, whether taken singly or in tandem, they still have their supporters and so require some attention.

In the first place, Malin argued that the Dust Bowl was essentially the work of nature, being caused by conditions of severe drought; that therefore it was an inevitable disaster and the plains people its victims, not its perpetrators. In 1946 he published in the *Kansas Historical Quarterly* a series of three articles arguing that dust storms "are a part of the economy of nature and are not in themselves necessarily abnormal."⁶ Painstakingly, he tried to show that, long before there was white settlement and plowing of the native sod, dust storms had blown across the region. Some of the dust storms in his examples may in fact have been due to drought and others to prairie fires, both events being capable of destroying natural vegetation and freeing the soil to move. Severe, prolonged drought can ruthlessly destroy the grassland ecosystem; it certainly did so in the distant past, might have done so to some degree in the thirties, and undoubtedly will do so again in the future. Unfortunately, however, Malin could not, from his travelers' reports and newspaper notes, establish conclusively that drought had been the sole and sufficient cause of the pre-Dust Bowl storms. Nor could he demonstrate that any of the earlier storms matched those of the 1930s in intensity or scope, though he did make it

incontestable, if anyone doubted the point, that not every puff of dust had a human origin. In arguing that case, he must grant the critical point that dust storms are evidence of ecological disturbance and disequilibrium, whatever the cause. The difficulty he faced was how to assign all, or even most, of that disturbance to natural factors—and he could not, as an historian working with archival evidence, surmount it.

Scientists, climatologists and ecologists in particular, may one day be able to tell the historian why droughts happen. They may eventually be prepared to trace their contribution to wind erosion acre by acre, square mile by square mile, county by county. But neither in the thirties nor in the decade or two after was science able to give a clear, reliable answer as to whether humans or nature was responsible for the Dust Bowl. More recently, however, photographs taken from orbiting earth satellites have begun to supply the kind of data that Malin lacked—and it has not been strong for his case against nature. In the late winter of 1977, when the Plains were roiled again by high winds and dirt, when Oklahoma was stunned by its worst dust storm in twenty years, the meteorologist Edward Kessler demonstrated precisely, with the aid of the new high-level cameras, that the source of the dust was west Texas farms, plowed and planted to seed, while neighboring New Mexico lands left in grass remained stable.⁷ The dust could actually be seen picking up from one side of a fence, the plowed side, and streaming eastward. Aerial cameras have documented that it was not the ragged, pervasive specter of drought but the human mind and its ill-considered land practices—a mind marking its presence by straight fence lines—that was the main culprit in the 1970s; and the cameras show persuasively that the same was probably true in the 1930s. There can hardly be any doubt now that the destruction by plow of the grass cover on vulnerable lands—semiarid lands where the soil is loose and the horizon flat and open to winds—has been the leading reason for the devastating scale of dust storms

in the twentieth century.

Malin seems to have realized, even as he was writing, the inadequacy of blaming nature for the Dust Bowl. There was clearly something more at work—in the culture of plains people and the nation. Here is what he wrote at the end of his dust storm series:

The worst manifestations of soil blowing as related to agricultural operations occurred during the pioneering process. The country was new, the population was not settled-in on a firm and stabilized foundation in harmony with the new environment . . . The older and better established communities usually kept their soil fairly well under control. In recent times, because of the technological revolution in agriculture and as the result of the initial exploitive stage of power farming, the period of the late 1920's was analogous in a sense to pioneering. In the light of that experience and well considered conservation measures, the worst features of those eras need not be repeated. There is no reason to assume that dust storms can be prevented altogether, because without question they were frequent and severe prior to white settlement and the plowing of the sod, but the damage incident to agricultural operations should and can be minimized by careful soil management.⁸

This conclusion took most of the wind, and much of the dust, out of his earlier argument. It was an almost backhanded way of admitting that there had been, after all, significant cultural forces at work creating the Dust Bowl disaster.

Malin's second thesis, when closely examined, had problems of its own. It began with the claim that ecological disequilibrium on the Plains and the dust storms it generated was due; not merely to nature, but to the culture of a "pioneer" people. The settlement of the region was going through a youthful phase

when the land was still unfamiliar to its new inhabitants. As newcomers, they did not understand what their environmental limits were nor have the techniques to overcome them. Added to their lack of knowledge was an instability in their social organization; things generally, the soil included, were out of their control. That primitive phase would give way, Malin was sure, to one of "better established communities," when the population would stay put, when farm turnover would come to an end, when generation would begin to follow generation on the same piece of land. Then erosion (except for what was natural and inescapable) would come to an end. In later writings, Malin would do path-breaking work on the phenomenon of frontier instability; in 1946 he associated such instability with the land destruction of the thirties. But there was some uncertainty in his reasoning; he was not at all sure what he meant by "pioneering." Modern power farming in the form of the tractor and the mechanized harvester had appeared on the Plains, he pointed out, immediately before the major dust storms—a state of affairs hardly found on the archetypal American frontier or in classic pioneer life. He described the plainsmen as going through an early "exploitive stage" with that technology; their culture in the late 1920s was only "analogous in a sense to pioneering."⁹ With this sentence Malin shifted the terms of his indictment. Advanced technology now became the culprit, undermining at least temporarily the good judgment embedded in a traditional agronomy. But the tractor was not forever to be a bad influence, for once the revolution was assimilated a new plateau of civilization would be reached. Thus no matter what he meant by pioneering, whether he had in mind the entering of a new land or the adoption of a new technology, Malin remained optimistic. The Dust Bowl episode was a brief spot of darkness and chaos on the road to order, and nothing like it would happen again.

In the passage quoted above, conservation appears as a normal activity of a culturally mature region. It is defined not as the preserva-

tion of grassland ecosystems but as a regime of "careful management" of the soil, and it will arrive, Malin asserts, with time, with affluence, with more (not less) technology, with population equilibrium. The confidence behind these assurances resembles closely that of the so-called Progressive conservationists, as described by Samuel Hays.¹⁰ Like Malin, they maintained that environmental destruction was a result of a pioneering culture—of poor, ignorant, unsettled people—and that it would disappear with progress. But unlike the Progressive conservationists, for whom the state was the proper agency to assume active command and move the society beyond its pioneering crudities, Malin denied that government was needed to enforce conservation. Careful management would come about inevitably with further development of the private economy.

Was Malin right in this confidence? Was the Dust Bowl merely a passing stage in the plains region's cultural maturing? And is environmental adaptation a product of progress and prosperity? The answer to all those questions must be a qualified no. The dirty thirties were largely the outcome of a well-established, long-maturing economic culture, that of agricultural capitalism. Moreover, its recent apotheosis as agribusiness has not made it a more adaptive or stable culture, nor more preservation-minded. To be sure, in the aftermath of the thirties it has been placed under some restraint by other, countervailing forces in American culture; nonetheless, agricultural capitalism remains the dominant agency on the plains today, and the prospect is less reassuring than Malin wanted us to believe.

Any attempt to understand the cultural roots of the Dust Bowl must begin with a scrutiny of Great Plains rural society in the late 1910s and the 1920s. Before that time there were, of course, forays by farmers into the fragile shortgrass country, the lands lying beyond the hundredth meridian; there was precedent for both agricultural settlement and widespread ecological disruption. And there was a recurrent pattern of crop disaster and

farm failure, of retreating to ground representing less risk. But in the teens and twenties there occurred the critical assault on the grasslands that some have called "the Great Plow-up."¹¹ A brief summary of the history of those years will tell us much about how and why there was a Dust Bowl.

World War I put the American wheat farmer into a happy dither. As the Turks cut off shipments of grain from Russia, the largest producer and exporter of wheat in the world, Europeans turned to the United States, to the Great Plains, for their food supply. Wheat, it was said in Washington and in the western provinces, would help win the war by feeding the Allies and toughening their resolve. When the war ended, Europe for a while still needed food imports, and by 1919 America, under government-set goals, harvested 74 million acres of wheat—yielding 952 million bushels in all, a 38 percent increase over the 1909–13 average, and providing 330 million bushels for shipment abroad. Most of this gain came in winter wheat, the standard variety grown over most of the southern Plains, which was planted in the fall and cut in the following midsummer. From 1914 to 1919 Kansas, Colorado, Nebraska, Oklahoma, and Texas had expanded their wheatlands by 13.5 million acres, mainly by plowing up 11 million acres of native grass.¹²

The Great Plow-up, initially provoked by the wartime mobilization of the national economy, might have been expected to pass with victory. Such was not to be the case. The war integrated the plains farmers more thoroughly than ever before into the national economy—into its network of banks, railroads, mills, implement manufacturers, energy companies—and, moreover, integrated them into an international market system. When the war was over, none of that integration loosened; on the contrary, plains farmers in the 1920s found themselves more enmeshed than ever, as they competed fiercely with each other to pay off their loans and keep intact what they had achieved. By the mid-twenties that integration did begin to pay off; having squeezed

through the postwar depression, many plains farmers began to rake in substantial fortunes. There was, for instance, Ida Watkins, the "wheat queen" of Haskell County, Kansas, farming two thousand acres; in 1926, she made a profit on her wheat of \$76,000, more than President Coolidge's salary. Down in the Texas panhandle the movie mogul Hickman Price set about to show plainsmen what modern commercial farming could really do, how it could apply the large-scale business methods of Henry Ford to the mass production of wheat. His factory farm stretched over fifty-four square miles and required twenty-five combines at harvest time. In every part of the Plains there were pacesetters like this man and woman who fervently believed in capitalistic enterprise and sought to apply it to the unproductive grasslands. These two were among the largest and most successful entrepreneurs; the less aggressive were forced by the competitive marketplace to follow their lead.¹³

The mobility of Malin's machines not only allowed these large-scale enterprises to develop but also encouraged widely dispersed holdings. It was now possible to drive one's equipment to another county or even to another state, plant wheat, return home in a few weeks, and wait until the next spring before visiting the land again—in other words, to become a "suitcase farmer." This was particularly attractive to wheat speculators, many of whom were city bankers, druggists, or teachers; they put in their seed, went back to their regular work, and waited to see what would happen to the Chicago grain futures. In a year of high prices they might make a killing, paying for an entire farm with one crop, then selling the land at a tidy sum to another fast-buck chaser. Not all suitcase farmers were looking for such quick returns; some of them were more concerned about their investment's long-range security.¹⁴ But the machine made possible, as it made common, an exploitative relationship with the earth—a bond predominately commercial—so that the land became little more than a form of capital that must be made to pay as much as possible.

All across the flat open spaces the tractors steadily plowed away, especially in the second half of the twenties and up until the very eve of the dust storms. Occasionally they even worked at night, their headlights moving like fireflies in the grass. Near Perryton, Texas, H. B. Urban, an altogether typical wheat farmer of the day, arrived in 1929 and cranked up his two International tractors; each day he and his hired man broke out twenty acres of native prairie, until virtually his whole section of land was stripped of its grama and buffalo grass. In thirteen southwestern Kansas counties, where there had been two million crop acres in 1925, there were three million in 1930. Altogether in that period farmers tore up the vegetation on 5,260,000 acres in the southern Plains—an area nearly seven times as large as Rhode Island. Most of the freshly plowed ground went into wheat, so that over the decade of the twenties the production of that cereal jumped three hundred percent, creating a severe glut by 1931. That, in sum, was the environmental history immediately preceding the dirty thirties. When the black blizzards began to roll across the region in 1935, one-third of the Dust Bowl region—thirty-three million acres—lay naked, ungrassed, and vulnerable to the winds.¹⁵

This Great Plow-up was not dictated by Malthusian population pressures, which in many parts of the world have been responsible for decisions to put marginal land into food production. Nor was it exclusively or primarily drought that disrupted the ecological system of the Plains; it was humans and the economic culture pushing them ahead. Nor was their push carried out in ignorance or inexperience. For over a century men had been coming into the shortgrass country, observing it, and writing about its risks. For a half-century before the Dust Bowl, cattlemen had trailed their animals to railheads there, and farmers had repeatedly tried breaking the sod to make houses and crops, leaving a record of devastating reverses as well as some years of bounty. Furthermore, by the second and third decades of the twentieth century the region could by

no means be labeled an intellectual frontier; an extensive scientific literature was available on it, and the hard realities of the country had permeated widely into common consciousness.¹⁶ All of this information was almost studiously disregarded in the 1920s plow-up. To describe those who did that disregarding as backward, primitive folk, as a hard-living rabble of frontiersmen, simply will not do. On the contrary, they were, especially the leaders among them, people with access to capital and expertise; some of them were in fact men and women of education and broad sophistication. The historical problem to be solved is why such people used their capital as they did, why they demanded and quickly deployed the new machinery, why they chose to hear what they did from the past and present, shutting out what did not appeal to them—what, in other words, they were after and why. If we call them hungry, then we must be careful to specify what they were hungry for. If we call them pioneers, then we must go further to distinguish them from other pioneers in national and world history.

Essentially, the Great Plow-up was the work of a generation of aggressive entrepreneurs, imbued with the values and world view of American agricultural capitalism. They smelled an opportunity to create a profit on the Plains and, in the classic way of entrepreneurs, they charged out to create that profit—to derive from the land both personal wealth and status. No matter that others had failed or that the risks were high; these entrepreneurs were convinced they would succeed, as indeed they did in the short run. For a few years at least they made the region say money instead of grass. Throughout the twenties a scattering of reporters came to watch them succeed, writing up their achievements in glowing prose for newspapers and magazines. Many of these farmers had once been lowly clodhoppers; now they were making their mark on the world, were getting celebrated as “kings” and “queens” of wheat. And justly so, for the food that poured from the erstwhile grasslands was, if the environmental costs are disregarded, a

positive gain for the nation and the world as well as for the entrepreneurs. They heard little criticism. Standing behind them all the way, trumpeting their contribution to humanity repeatedly so that it was not lost on the American public or on the farmers, was a vast chorus of bankers, millers, railroad executives, and government officials, all of them looking forward themselves to sharing in the abundance being created. It is, of course, the nature of entrepreneurs, in agriculture as in industry, to disregard the voices of caution and criticism, to show themselves venturesome where others have been ruined, and to court disaster.

Entrepreneurialism was not a new cultural innovation on the Plains. It had been around, gathering force, seeking territory for its expression, for several centuries—indeed it had been the animating ethos of the economic culture of capitalism since its rise to hegemony.¹⁷ Out of that imported cultural heritage we can single out several influential ideas about nature and farming, all of them endlessly reiterated and repeatedly acted on by Europeans and Americans long before anyone had contemplated plowing the high Plains. Each of these would be an idea with bleak consequences in the 1930s.

First, the agricultural entrepreneur stood for the idea that the land's true and only end was to become a commodity—something to be used, bought and sold, for human gain. The land itself, divided into property and made an object of speculation, was the first part of nature to be commodified by this culture, then came its products. That drive toward commodification was never uncontested or universally accepted. On the Plains there were, as there had been elsewhere, many rival cultural values present; often these had been brought over from Old World farming or religious traditions, or from some obscurely intertwined, peasant-grounded combination of the two.¹⁸ These rivals for moral authority found their way into much of the literature and art of the region; into, for example, the novels of Willa Cather, who spoke often of the mysterious spiritual power of the Plains—of an indwelling

presence in nature there, one particularly accessible to many women and to recent immigrants.¹⁹ But it is safe to say that the typical wheat entrepreneur did not read Cather or put much stock in peasant modes of thought. None of that, he was quick to insist, was rationally compatible with his drive to dominate and commodify.

Second, entrepreneurialism was part and parcel of the social ideal of economic individualism. It deliberately made, with no end of paradox, the pursuit of private wealth into a social ethic. The implications in that individualism for the ecological communities of the Plains were predictable: farmers would not be expected to accommodate their ambitions to the whole of nature, or recognize and use those ecological interdependencies for their own survival. Likewise, they would, and did, reject any restraint on their economic freedom to get what they could from the Plains in their own terms now, in their own generation. All others, future and present, must look out for themselves. Here again Malin was simply wrong; it was the entrepreneurial culture, not frontier life, that was destructive to communal bondedness and social stability.²⁰

Third, risk was treated in this economic culture almost as a positive value, as a needed spur to success. Without risk, there could be no gain. This idea has been emphasized earlier; what should be added now is the insistent search by the bearers of entrepreneurial culture to find ways to pass the risks on to someone else. Since they saw themselves as taking chances that, if profitable, would enrich the entire society, entrepreneurs hoped that others would pay some of their costs. In the case of the Dust Bowl those costs included the damage that the dust storms did to health and property and the rehabilitation they necessitated. More than \$2 billion was spent by New Deal agencies in the thirties to keep the farmers of the plains region in business.²¹ As risk-spreaders, these federal programs signified the maturation of the national capitalist economy: the coming of a new era when entrepreneurial drives need not entail such

severe penalties for failure. Back in the 1890s, when little outside assistance had existed, the plains settler had learned that he had either to adapt to nature or leave. The generation that came to plow in the twenties and ate their own dust in the thirties successfully evaded much of that disciplining. They lived in a more humane and protective age that allowed them considerable economic freedom while removing some of the old anxiety and the bitterness of defeat.

Bring these ideas, this economic culture, into a volatile environment where intermittent drought was a fact of life—and the outcome could hardly be anything different from the dirty thirties. That such an outcome would seem to be unavoidable is clear in the famous government report, *The Future of the Great Plains* (1936). Its chief author, the economist Lewis Cecil Gray of the Resettlement Administration, one of the country's leading agricultural historians, made an analysis of the cultural roots of the Dust Bowl similar to the one suggested here, of "the attitudes of mind" inherent in an expansionary, entrepreneurial society.²² The evidence was clear to Gray that the disaster could not be wholly laid at the door of nature, of imperfect technique, of inadequate knowledge, or of "frontier society." As in the case of that other great tragedy of the decade, the Depression, the Dust Bowl was a crisis made and delivered by socially destructive forces in modern American culture.

In 1946 James Malin vigorously rejected Gray's cultural analysis of the plains debacle, and he was not alone. His was a common response in the region, somewhat so in the thirties and unabashedly so by the time he wrote. A resurgent national economy, a new war raging in Europe, the success of the federal relief programs in helping people hang on until better times—all these elements made deeper critical inquiry unpopular. Most important of all, nature contributed to the renewal of self-assurance. The return of rains, accompanied by bumper wheat crops in the early 1940s, demonstrated that the environmental damage had not been permanent—and, indeed, it has been difficult until the present nuclear age for

humans anywhere to inflict irreversible destruction on the earth and its fabric of life. Nature has extraordinary powers of recuperation, a fact that has been proved many, many times in the long geological history of the Great Plains. When the healing comes, it is easy and altogether human to suppress the memory of misjudgment and loss; to revert to old, familiar ways and deny responsibility. That was precisely what Malin hoped would happen: a renewal of faith in the culture of entrepreneurial farming. Any effort to find a different path for the Plains he harshly identified with "totalitarianism."²³

Despite assurances that the Plains would achieve a mature agricultural capitalism in the post-World War II period; that the land and society would come under firm, enlightened control; that no radical reform in the culture would be necessary, the region's recent ecological history has seen some disturbing chapters. High crop prices and great profit expectations have again and again produced waves of profit-seeking enterprise when grasslands have been destroyed to make more crops. In the aftermath of each of those waves have come new cycles of dust storms, some of them as grueling as anything in the thirties. Then, so the familiar pattern goes, the blowing dust brings in its train warnings from federal soil scientists, larger budget requests from federal agencies, and talk of new state and national laws to reform the culture. Perhaps these frequent replays of the thirties have produced a cumulative reform of the culture. One might argue, though not precisely in the terms Malin did, that the capitalistic agriculture has in fact been substantially altered since the 1930s; that it no longer enjoys the power and influence it once held in the region; that today it is strictly hedged about with governmental authority; and that these reforms, these countervailing pressures, have successfully prevented another Dust Bowl from occurring.²⁴ It will take a few serious, prolonged droughts to test thoroughly the accuracy of such an argument. Very recent evidence, however, indicates that the entrepreneur is still around, still sitting tall in the

tractor seat—and the old danger is not over.

In the late spring and early summer of 1983 the national news again announced the impending threat of western wind erosion. For example, *Time* reported that wheat operators had torn up the sod on 6.4 million acres of marginal grasslands in Montana and Colorado. Depressed livestock prices and favorable federal wheat support programs were responsible for this frenzy. "I want to make a buck," was the way one Montanan expressed his motives to *Time*. He and his neighbors had broken 250,000 acres of grazing land over the preceding decade. "We face the possibility of another Dust Bowl," said the executive vice president of the Montana association of conservation districts. So serious was the threat that the conservative senator from Colorado, William Armstrong, with backing from the Reagan administration and the Montana Stockgrowers Association, introduced a "sodbuster" bill that would deny federal payments of any kind for crops grown on highly erodible land. And a Colorado county began contemplating the issuing of permits by its commissioners before any more sod could be plowed up.²⁵ Unmistakably, leaders of the region were being forced to admit that they did not yet have sufficient public authority to restrain risk-taking entrepreneurs, nor could they depend on capitalistic maturity to achieve soil conservation. Whether they now had the will to establish that authority remained to be decided.

The ecological history of the future Great Plains is still to be accomplished, still to find its historians. When they come to write it, they will have a subject of international significance, for these days the dry lands of the earth are everywhere under pressure and scrutiny. In that future history, as in past accounts, we may expect the key issue to be the fit of the Plains's economic culture to its environment. And we can predict that historians will return often to the dirty thirties to understand what that culture has been and what it is in the process of becoming.

NOTES

1. Quoted in David A. Dary, *The Buffalo Book* (New York: Avon, 1974), p. 4.
2. This sentence is a paraphrase of Lewis Mumford, *The Power of the Pentagon* (New York: Harcourt, Brace, Jovanovich, Harvest ed., 1970), p. 393. For a discussion of the new ecological history, see my article, "Nature as Natural History: An Essay on Theory and Method," *Pacific Historical Review* 53 (February 1984): 1–19.
3. Both of Webb's major works, *The Great Plains* (Boston: Ginn, 1931) and *The Great Frontier* (Boston: Houghton Mifflin, 1952) are landmark studies in the environmental impact on culture.
4. Malin, "Ecology and History," *Scientific Monthly* 70 (May 1950): 295–98.
5. A useful discussion of this problem is in John Bennett's *The Ecological Transition: Cultural Anthropology and Human Adaptation* (New York: Pergamon, 1976), esp. 162–67, 209–42.
6. Malin, "Dust Storms: Part One, 1850–1860," *Kansas Historical Quarterly* 14 (May 1946): 129–44.
7. Edwin Kessler, Dorothy Alexander, and Joseph Rarick, "Duststorms from the U.S. High Plains in Late Winter 1977—Search for Cause and Implications," *Proceedings of the Oklahoma Academy of Science* 58 (1978): 116–128.
8. Malin, "Dust Storms: Part Three, 1881–1890," *Kansas Historical Quarterly* 14 (November 1946): 391–413.
9. *Ibid.* The distinction between pioneering and entrepreneurialism is commonly obscured in American historical writing as it is in popular mythology; indeed, they are often conflated, especially in the West, producing a "cowboy capitalism." Malin's writing is replete with the confusion.
10. See Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890–1920* (Cambridge: Harvard University Press, 1959).
11. See, for example, Vance Johnson, *Heaven's Tableland: The Dust Bowl Story* (New York: Farrar, Straus, 1947), chap. 12.
12. A. B. Genung, "Agriculture in the World War Period," in U.S. Department of Agriculture, *Farmers in a Changing World* (Washington, 1940), p. 280–84; Lloyd Jorgenson, "Agricultural Expansion into the Semiarid Lands of the West North Central States during the First World War," *Agricultural History* 23 (January 1949): 30–40; *Kansas City Star*, 19 April 1935.
13. Johnson, *Heaven's Tableland*, 136–37; *Topeka Capital*, 3 August 1926; *Panhandle Herald* (Guymon, Okla.), 13 December 1928. See also Garry Nall, "Specialization and Expansion: Panhandle

Farming in the 1920's," *Panhandle-Plains Historical Review* 47 (1974): 66-67. The largest operator of all on the Plains was located in Montana: see Hiram Dache, "Thomas B. Campbell—The Plower of the Plains," *Agricultural History* 51 (January 1977): 78-91. Campbell's ambition was to be a "manufacturer of wheat"; he farmed, with House of Morgan backing, over 100,000 acres, most of it on Indian reservations.

14. Leslie Hewes, in *The Suitcase-Farming Frontier: A Study in the Historical Geography of the Central Great Plains* (Lincoln: University of Nebraska Press, 1973), gives a thorough accounting of this phenomenon, and one strongly supportive of its entrepreneurial characteristics.

15. H. B. Urban, transcribed interview, 15 June 1974, Panhandle-Plains Historical Museum, Canyon, Texas; *The Dust Bowl*, U.S. Department of Agriculture, Editorial Reference Series No. 7 (Washington, D.C., 1940), 44; Clifford Hope, "Kansas in the 1930's," *Kansas Historical Quarterly* 36 (Spring 1970), 2-3; Johnson, *Heaven's Tableland*, 146.

16. A number of excellent studies of popular understanding of the Plains have been published by geographers and historians; see, for example, Brian Blouet and Merlin Lawson, eds., *Images of the Plains: The Role of Human Nature in Settlement* (Lincoln, University of Nebraska Press, 1975).

17. Entrepreneurialism is essential to all forms of agricultural capitalism, whether it be potato farming in Maine or rice growing in California. But the strength of this drive may, of course, vary from time to time and place to place. Not all of American agriculture has been so unstable or risk-taking as that of the semiarid plains.

18. Frederick Luebke, "Ethnic Group Settlement on the Great Plains," *Western Historical Quarterly* 8 (October 1977): 405-30.

19. One thinks, for example, of the Swedish immigrant Alexandra Bergson in Willa Cather's *O Pioneers!* (Boston: Houghton Mifflin, 1913). Though eager to acquire more and more property, Bergson responds to the land with a powerful love and yearning. "It seemed beautiful to her," writes Cather, "rich and strong and glorious. Her eyes drank in the breadth of it, until her tears blinded her" (p. 65).

20. A provocative discussion of this set of ideas is C. B. Macpherson's *The Political Theory of Possessive Individualism: Hobbes to Locke* (Oxford: Oxford University Press, 1962).

21. This figure includes, in addition to ecological restoration efforts, all programs of farm price supports, rural relief, and public works expenditures.

22. Great Plains Committee, *The Future of the Great Plains*, U.S. House Document 144, 75th Congress (Washington, D.C., 1937), 63-67.

23. Malin, *The Grassland of North America: Prolegomena to Its History* (Lawrence, Kansas: privately published, 1956), p. 335.

24. As John Borchert has written, the flurry of federal soil and water conservation programs since the thirties has "encouraged a widespread belief that, though there will be future droughts, there need be no future dust bowl." See "The Dust Bowl in the 1970s," *Annals of the Association of American Geographers* 61 (March 1971): 13.

25. *Time* (27 June 1983): 27.