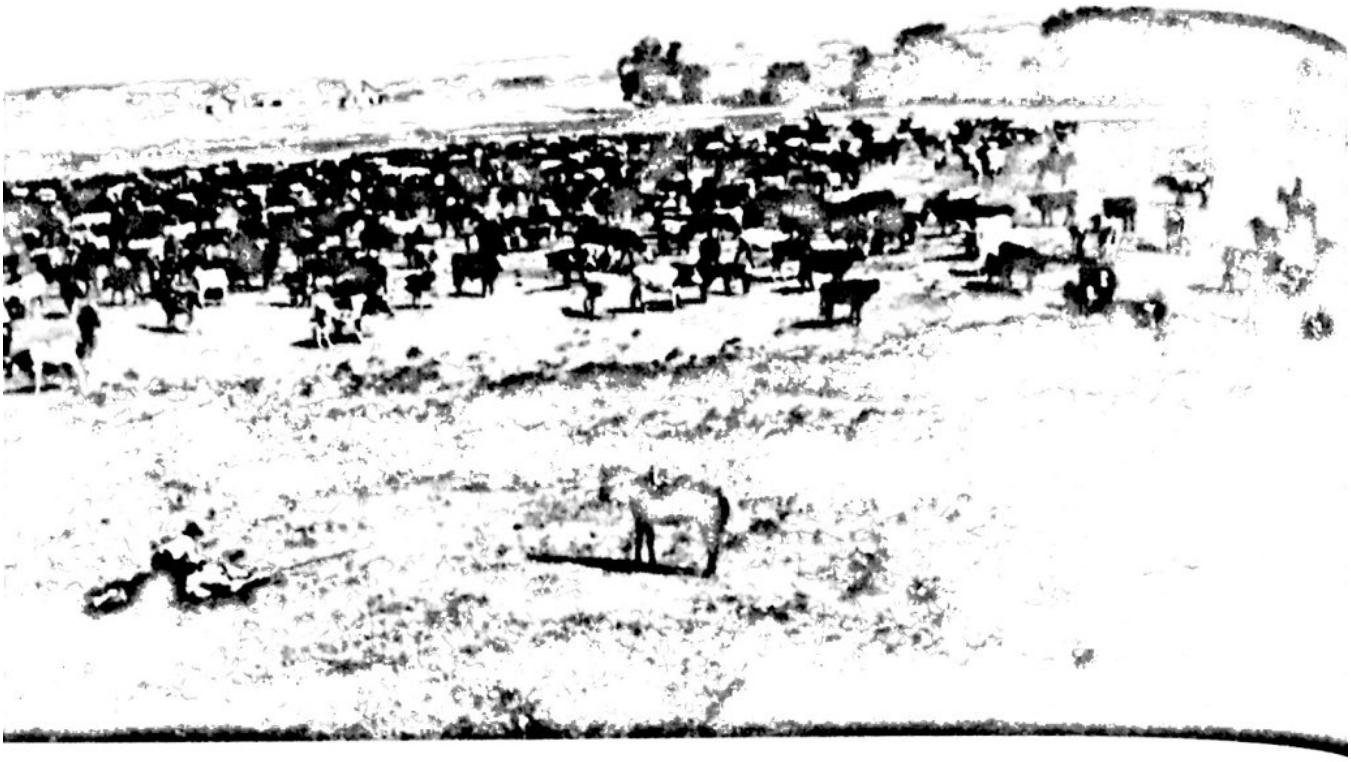
Sodbusting

MUCH OF WHAT WAS TO BECOME the Dust Bowl first came into American hands with the Louisiana Purchase of 1803. President Thomas Jefferson, who promoted that real-estate deal, wanted the land as an insurance plan for his democracy of small farmers. As the population mounted, he argued, opportunity to own rural property would diminish unless more land could be acquired and reserved for settlement. No single idea has been more deeply embedded in the American mind than this notion of a democratic society that must always have more of something to be secure and at peace with itself. Justice and equality, Jefferson's theory suggested, require continual economic expansion, which to his mind meant simply more farmland for the nation. The Plains Indian, though he lived in a far more egalitarian culture than Jefferson's, would not have understood that thinking. First control your numbers, he would have said; then simplify your wants and see the earth as everybody's mother rather than as a piece of property to be divided by competing individuals. But the white man did not view land and society in that way. He based his democratic ideals at first on geographical expansion: as long as there is more of nature somewhere else, there is no need to share here—every person may build his own Monticello over yonder hill. Later that view would take on extravagant proportions.

Those Americans who did not take up the expansionary attitude were frequently accused of being elitists. In some cases the charge was accurate; in others it was most erroneous, for there were in fact other ways to get to democracy besides physical growth. One of Jefferson's own army officers, Lieutenant Zebulon Pike, was an anti-expansionist, and apparently no elitist—not a man, that is, of high social or

economic rank who might be threatened by new sources of wealth. His 1806 report on the southern plains (he was the first American ever to visit the area) began a century-long dispute over that region and its value for the new nation. Pike followed the Arkansas River west up into the mountains. What he saw on that part of his explorations were for the most part the extensive riparian dunes that had blown out of the riverbed in dry seasons; if that was what all the plains were like, he concluded, then the nation had purchased a veritable desert. Yet Pike could still find a blessing in that sandy waste: "the restriction of our population to some certain limits, and thereby a continuation of the union."[1] Having a wide desert on the western side and an ocean on the eastern, the United States would be more politically cohesive and safe. It was an appealing prospect for others who came after Pike, too. "Great American Desert," they began to write on maps of the interior plains, and what they usually meant was that Americans had better stay put and tend their gardens rather than go adventuring westward. Of course, they exaggerated the aridity of the plains—not, however, the anarchic tendencies of their society.

Neither Pike nor other "desert" proponents had the slightest effect on the pace of plains settlement.[2] They were seen as enemies by all who identified freedom and democracy with national increase. Charles Dana Wilber, a town builder in Nebraska, felt compelled to answer them by an appeal to the Creator: it has never been God's intention, he announced, that any part of the earth be "perpetual desert." Wherever man "has been aggressive," he has made the land suitable for farming—"so that in reality there is no desert anywhere except by man's permission or neglect." If the plains were not all that Jefferson had hoped they would be, the farmer



Early cattle ranching in Kiowa County, Kansas. (*Kansas State Historical Society*)

could remedy their deficiencies. Rain would follow the plow, Wilber predicted; that was the way the Creator expected men to think. Turn the grasses under and the skies would fill with clouds. There were thus no restrictions in nature that man must observe; on the contrary, all ecological limits were simply challenges to be overcome by human energy. Neither was there any ceiling on the number of people who could come to the plains to be free, prosperous, and self-respecting. So went the expansionist argument against anyone who thought America was already large enough.[3]

Under the Homestead Act of 1862, any person who settled on 160 acres of shortgrass, stayed there for five years, made "improvements," and paid a filing fee became part of the landed gentry. But farmers were slow to go that far west, having rich black prairies to take up first, and when they did arrive they found the country in the hands of cattle barons. Even before the Indians and bison were out of the way, the cattlemen had come in, seeking to exploit the grass—without, in many cases, bearing the burden of ownership. Charles Goodnight was among the earliest ranchers in the Dust Bowl vicinity, trailing steers down from the Colorado gold camps in 1877 to the Palo Duro Canyon on the edge of the Texas High Plains. To the southeast of him the "beef bonanza," as it was called, was already organized; there were close to 5 million head in Texas alone, and more than 650,000 were

driven north to Abilene, Kansas, and to other railheads that year. By 1880 the prospects were glittering as slaughterhouse prices soared from $3.00 to $60 per animal.

Two members of the British Parliament toured the plains and found annual profits of 33.3 per cent on investment, a fact they quickly reported to investors back home. English, Irish, and Scottish capital subsequently poured into the plains, along with money from Eastern lawyers and bankers. Among the largest of the enterprises formed was the XIT ranch in the panhandle (the brand stood for "ten counties in Texas"), which sprawled over 3 million acres and ran 150,000 head. The cattle kingdom, the first major use to which Americans put the plains, was in its glory.[4]

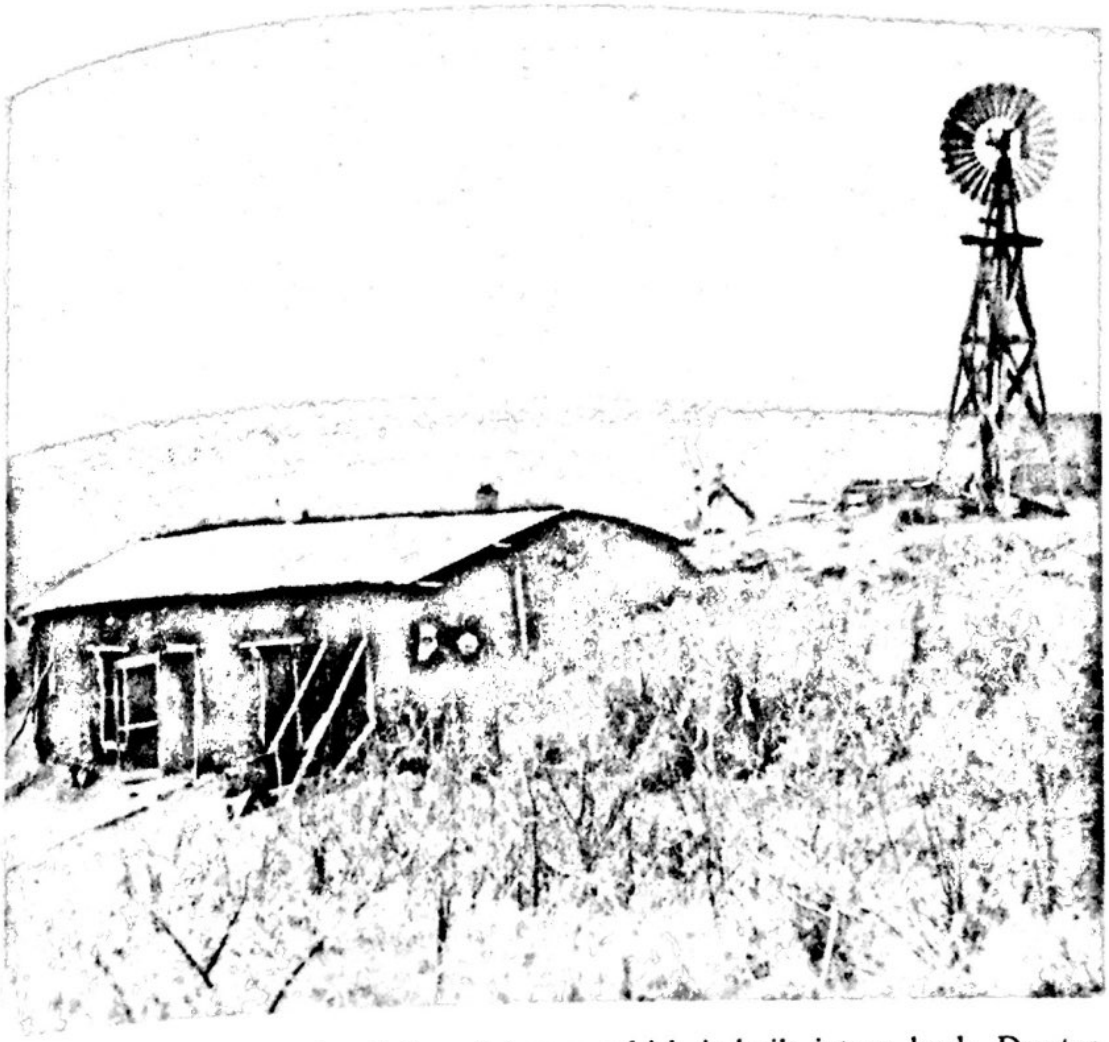
The world of cowboys, roundups, and cattle drives has been recalled many times, but not the ecological story. Whether they held title or not, the cattlemen pushed the land as far as it would go, and then pushed some more. They generally viewed the southern plains as another Comstock Lode, to be mined as thoroughly as possible by overstocking the range. In some areas they ran four times as many cattle as the grass could carry, resulting in depletion and long-lasting damage. By 1880 a steer on one range needed 50 acres to fatten up, where a decade earlier 5 acres had been sufficient. The winter of 1885-86 proved to be the harshest in the recorded history of the region, and with severely diminished buffalo grass for forage, it was a fatal blow. Eighty-five per cent of the cattle perished on some ranches, and their carcasses lay black and stinking across the spring landscape.[5] The longhorns had never really counted for very much in their own right; they were merely the impersonal, massed mechanism for turning grass into money. Now, in the face of this collapse, the beef entrepreneurs retreated right and left, their "industry" bankrupted by weather and, more, by overexpansion. Altogether, their hegemony had lasted a scant two decades before it self-destructed. Had anyone cared to notice then, it was a foretaste of later developments on the plains. But for most Americans at the time, the more important issue was that the cattle kings had monopolized a resource that others now wanted.

Into the post-1886 vacuum poured the waiting farmers, armed with iron plows to "break the land" and establish a more democratic tenure. Unlike the cattlemen, they came without much capital—as little as a team of oxen and a dollar gold piece. One family arrived in western Kansas with "nine children and eleven cents."[6] Out of the sod itself they made their houses, with walls two feet thick, dirt roofs that leaked muddy water, and straw-filled mattresses that swarmed with bedbugs and fleas. Their diet was cornmeal and molasses, baking-soda biscuits, coffee made from roasted rye. It was as hard a life as any that Americans have made for themselves, yet they liked it well enough. "The choice," writes Edward Higbee, "was between the dry plains or no land at all worth having." By 1890 there were 6

Sod house, location unknown. The menfolk may be off farming or looking for work. (*Western History Collection, University of Oklahoma Library*)

million people on the Great Plains; Colorado had 413,000, and Texas and Kansas over a million each. Like California a half-century earlier, the Dust Bowl was boom country, doubling its numbers in less than a decade, and in some panhandle counties the increase was 600 per cent. In the majority of cases they came wanting not a place to stay forever, but simply cash—a stake to take with them someplace else. "Few of them thought of the farm in terms of a permanent home," notes historian James Malin, ". . . but rather as a speculation which would be improved and developed with a hope of a sale sooner or later at a profit." Consequently, the mobility of the soddy entrepreneur was phenomenally high.[7]

The sod-house era did not even last as long as the cattle bonanza had. Beginning in 1889, drought scorched the plains for most of the next six years; at times it was as severe as in the 1930s. Luckily, there was little dust blowing, for most of the grassland still remained in sod. But in some cases the economic hardships were worse than those in the Dust Bowl years. In Kit Carson County, Colorado, a farm family had to get along for six weeks on nothing but squash; there was no money to buy fuel or shoes, either, so they wrapped themselves in rags. Some relief came from the Colorado Springs Board of Trade, but it was not enough to stop a massive exodus. By 1900 the population of Kit Carson had dropped 36 per cent from what it had been a decade earlier. In other counties of the region the decline was as much as 60 and even 90 per cent. God supposedly had assigned the plains to the farmer, urging him to plow and bring rain; now it was clear, as some declared, that "there is no god west of Salina."[8] The cattlemen, chastened by their



An old couple standing by their sod house, which is built into a bank. Decatur County, Kansas, 1890. (*Western History Collection, University of Oklahoma Library*)

failure, began to reacquire the land, buying up relinquishments from one failed farmer after another. And "the little sod shanty on the claim" crumbled back into the soil.

There was one man in Washington who found vindication in these unhappy events—John Wesley Powell. Now director of the U.S. Geological Survey, Powell had recommended in his *Report on the Lands of the Arid Region of the United States* (1878) a very different blueprint for plains settlement than had been followed. Beyond the 100th meridian, he believed, there was not enough rainfall for traditional farming; a 160-acre homestead there would not produce enough to maintain an American family. Powell's own proposal was to cut up the plains into much larger "pasturage farms," each covering four square miles, or 2560 acres, which would be sufficient to raise livestock profitably. The use of the word "farms" here was an obvious strategy to avoid the more aristocratic "ranches." But neither Congress nor most sodbusters were fooled; Powell's scheme would have made rural homes for only *one-sixteenth* as many families as the Homestead Act had. It was, they retorted, flagrantly restrictive, undemocratic, and too pessimistic about the

carrying capacity of the region.[9] But then, in the 1890s, with thousands unable to make a living on their quarter sections, Powell began to look like a prophet at last. And in the 1930s, when the same sequence of disasters occurred, his book was dusted off again and read by one bureaucrat after another. The key to successful plains occupancy, many began to argue, lay in bigger units and more cattle ranching. Instead of trying to accommodate everyone, the goal ought to be to remove as many farmers as possible to some other—usually undefined—spot, or take them out of agriculture altogether, allowing those who stayed to establish viable economic units.

Powell's "pasturage farms" would not have prevented the dirty thirties, if the beef bonanza could be taken as a precedent. But at least the idea was founded on a more informed, more realistic view of the plains environment. It came, as Wallace Stegner writes, from a "willingness to look at what was, rather than at what fantasy, hope, or private interest said there should be."[10] Powell, moreover, was not an elitist; on the contrary, he was an unusually far-sighted social democrat in an age of grab, one who was willing to use the power of government to save as much of the region for the common people as possible. Admittedly, his land policy would have given far fewer citizens a chance to achieve their own farm, but for those few it might have made opportunity more secure and genuine. Like Thomas Jefferson, Powell was a geographical expansionist, seeking to redeem the West from its worthless state and make it over into a garden for the dispossessed. But he realized, as had Zebulon Pike, that the natural world places "certain limits" on what man can do. A more ecologically adaptive democracy was what he had in mind. The unasked question, however, is whether that was enough. Did Powell's land proposals, good as they were, go far enough toward adaptation? The answer is no.

"The environment demanded relatively large acreages," writes Gilbert Fite—just as Powell had said.[11] That is at best a half-truth, and like all half-truths what is missing is the more telling part. Nature did not "demand" 2560 acres per family. To Powell, as to everyone else, the size of individual holdings was controlled primarily by economics: he simply took the American standard of living for granted, and then wondered how much land was needed to support it in the West. In his "pasturage farm" ideal he also naïvely assumed that the standard would forever remain the same. Down on the XIT ranch that acreage was already laughably below their expectations of wealth. On the other hand, there were some farmers on the plains—the Amish, and some of the Mennonites, especially—for whom 160 acres was sufficient in 1878 and still was in 1935. With the coming of mechanization, those small-scale operations increasingly became "Old World" anomalies in progressive America, but they showed that it was possible to endure on the plains, and eat something besides hardtack, without constantly needing more land. However, for most plainsmen who survived the nineties, the unending escalation of wants

brought a cutthroat competition for scarcer and scarcer resources that has lasted through the twentieth century. If there was one factor that would defeat broadly diffused, democratic tenure in the region, it was precisely the demand for ever higher living standards. The quarter-section farm eventually disappeared, the big farmers bought out the small ones, and the land moved toward oligarchy. Nothing in Powell's proposals would have stopped that process, for he had not begun to question the underlying economic values of the culture. From the beginning, Americans were on a hopeless ecological course: there would never be enough land to satisfy everyone's demands, especially if those demands were constantly growing.

John Wesley Powell, for all his common sense, did not come to grips with the expansionary drive of American culture, nor did he anticipate the tenacity of row-crop agriculture on the plains. In the wake of the 1890s débacle a new technique called "dry farming" began to appear. With changes in method, it was argued in dry-farming congresses and manuals, the land could be kept from reverting to useless grass and imperial cattlemen. The most famous spokesman for this movement was Hardy Campbell, who had worked out what he thought was a climate-free system of land use: deep plowing in the fall, packing the subsoil, frequently stirring up a dust mulch, and summer fallowing—leaving part of the ground unplanted each year to restore moisture.[12] Corn had been the chief crop on the plains before 1890; now farmers put their fields into more drought-resistant grains, especially Turkey Red, a hard winter wheat, and the sorghums. In 1909, to satisfy dry-farming agitation, Congress passed an Enlarged Homestead Act, which gave each settler 320 acres. Once again the plains became a feverish scene, as thousands rushed to get their share of the last agricultural frontier. It was in this latest surge of settlement, from 1910 to 1930, that a dust bowl was prepared.

The most important new wrinkle was the machine. Neither the cowboy nor the sod-house farmer knew much about technology; their methods were almost as old as agriculture itself—herding animals by horseback, walking behind a plow and team. But America had changed rapidly since these earlier waves of settlement; there were now long assembly lines turning out automobiles, trucks, and tractors. Henry Ford, who had been a farm boy in Michigan, represented those new economic developments, and it was his spirit, his machines, and his techniques that came to the southern plains in the early twentieth century. The grassland was to be torn up to make a vast wheat factory: a landscape tailored to the industrial age. Specialized, one-crop farming became the common practice, and business economics the standard of success or failure. Above all, the new-style sodbuster was an expansionist, feeling all the old land hunger of an opportunity-seeking democrat, but adding an intense desire to make his new machines profitable that would have shocked Thomas Jefferson's agrarian idealism.

Cutting prairie hay on the High Plains. (*Kansas State Historical Society*)

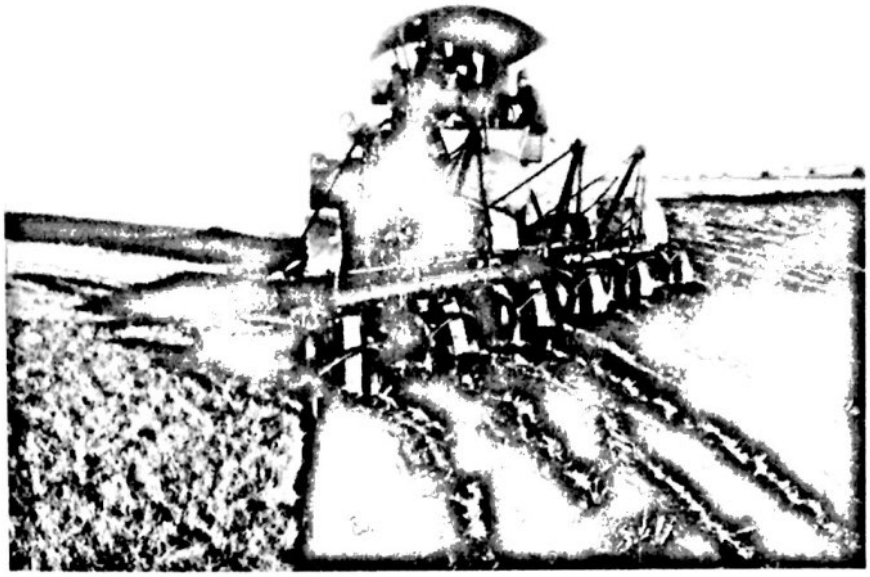
Under the new homestead policy, land entries skyrocketed nationally, especially after 1912, when Congress reduced the proving-up time from five to three years. In 1912, there were 24,000 entries in the West; in the next year, 53,000—and they remained at over 30,000 annually until the early twenties. Less than one-fifth of the filings in Colorado during this period resulted in permanent farms, again the movement out being almost as heavy as the migration in. In addition to the public domain, there was much private land put on the market at cheap prices. Finding that they could not make a profit on cattle, the owners of the XIT ranch, with their 3-million-acre land grant from the Texas legislature, went into the real-estate business. They sold farms for less than $13 an acre, at a time when land was being sold for $150 an acre in the midwest. Iowa and Illinois farmers needed no better inducement; they packed into railroad cars by the thousands for promotion tours of the Texas panhandle and plunked down cash for as much land as they could afford, commonly getting more than they could at the moment farm efficiently. A study of 22 High Plains counties in Kansas, Colorado, and Texas suggests the magnitude of population ebb and flow and the emerging scale of modern agriculture. In 1890 there were 5762 farms in those counties, and the average size of a unit, including a few ranches, was 256 acres. By 1900, with the swing back to cattle, there were only 4087 farms, and the average holding was up to 1730 acres. The year 1910 found 11,422 farms, averaging 520 acres each, as crops once more replaced pastures. The enlarging size of these wheat-belt farms was clear evidence

that, despite what the public land laws indicated as best, Americans on the frontier always wanted—and got—more. In 1920 the average unit in these counties was 771 acres, and in 1930, 813.[13]

These were halcyon days for all the nation's farmers, setting a standard of prosperity against which subsequent experience would always be measured. A growing urban population at home and bigger markets abroad meant high prices, substantial profits, and more money to expand. Wheat fetched from $1.04 a bushel in 1909 to 93 cents in 1914 on the southern plains; these were the so-called "parity years," when agriculturists stood on a roughly equal footing in purchasing power with manufacturers. But it was World War I that put the American farmer into a happy dither. As the Turks cut off wheat shipments from Russia, the largest producer and exporter in the world, Europeans turned to the Great Plains. The effect of this new and heavy demand was that in 1919 the price of American wheat reached 2.5 times its 1914 level. From Washington, as the Wilson administration led the United States into the war, there began to come a patriotic appeal to augment that of high prices: "Plant more wheat! Wheat will win the war!" These pressures, according to a later government official, lifted agricultural development "from its rational course of progress and forced it to an unnatural exertion in response to an abnormal demand."[14] Never mind for the moment what was meant here by "rational," "normal," or "natural." The fact is that the bloody conflict in Europe had a profound impact on the southern plains of America—not by sending it in a radically different direction, but by hastening trends already under way.

Under the wartime Food Control Act of 1917, the government guaranteed wheat prices of over $2.00 a bushel. Americans that year harvested 45 million acres of wheat, down (due to droughty weather) from 60 million in 1915, and providing only 133 million bushels for export. When the war ended Europe still needed food imports, and by 1919 the nation, under government-set goals, harvested 74 million acres—yielding 952 million bushels in all, a 38 per cent increase over the 1909-13 period, and providing 330 million bushels for shipment abroad. Most of this gain came in winter wheat, which was the standard variety grown on the southern plains: planted in the fall, cut in the following mid-summer. Kansas, Colorado, Nebraska, Oklahoma, and Texas had expanded their wheatlands by 13.5 million acres by 1919, mainly by plowing up 11 million acres of native grass. In Finney County, Kansas, there were 76,000 acres of field crops in 1914; there were 122,000 in 1919.[15] By that time the Western wheat farmer was no longer interested in merely raising food for himself and his family. More than any other part of the nation's agriculture, he was a cog in an international wheel. As long as it kept turning, he would roll along with it. But if it suddenly stopped, he would be crushed.

One of the most important facts of the period was that more acres in wheat did not mean more work in man-hours. In the 20 years after 1910 the labor needed



Busting sod with a Reeves steam tractor and plow. (*Kansas State Historical Society*)

to plant and harvest the nation's wheat fell by one-third, while the acreage jumped by almost the same amount. The reason for this disparity lay, of course, in mechanization: an industrial revolution, supplanting men and animals with fossil-fuel power, had come to American agriculture. Back in 1830 it had taken 58 hours of work to bring an acre of wheat to the granaries. A hundred years later it required 18 hours in Lancaster, Pennsylvania, one of the nation's first breadbaskets, 6 hours nationally, and less than 3 hours in the most advanced sections of the Great Plains. The wide flatlands of the Dust Bowl were especially suitable for mechanized farming. With surplus money in their pockets from the war, the region's wheat farmers rushed to county fairs to examine tractors, plows, and threshers. Some were observed dropping to one knee in the dirt to write their checks. As a businessman told Henry Ford, "You never saw the farmer so ripe for anything and plucking should not long be delayed."[16]

Ford, however, did delay and so lost his chance to duplicate his success with the Model T; the tractor was already transforming the farm when he began to tool up his River Rouge plant. As early as 1900 the southern plains witnessed the arrival of the monstrous Reeves machine—a miniature locomotive weighing several tons, chugging forward under steam power with a watertank and plow behind, severely compacting the earth but able to rip up more sod than dozens of yoked oxen could. The steam tractor, which had actually been around for fifty years before that date, was late in reaching the plains; not so its lighter, gasoline-powered replacement. By 1917 there were 200 companies manufacturing these new, small tractors, some of which had only 20-horsepower, 4-cylinder engines. Ford began producing his own Fordson version in that year, and when he gave up to his competitors a decade later, he had sold 650,000 of them. Out in the panhandle the most popular

Wheat king Simon Fishman (in coat and tie) and his employees breaking new land with disk plows. Greeley County, Kansas, 1925. (*Kansas State Historical Society*)

lines, selling as fast as they could be shipped out, were the McCormick-Deering 15-30 (made by International Harvester), the Farmall, the Case, and the bright green John Deere. Seated on one of these rumbling machines, small or large, the wheat farmer was a very different man from the old-style sodbuster. The tractor, argued one writer, changed him from "a clod into an operator; from a dumb brute into a mechanic."[17] Now he had a marvelous machine that could be used to break the land and hold it firmly under his control.

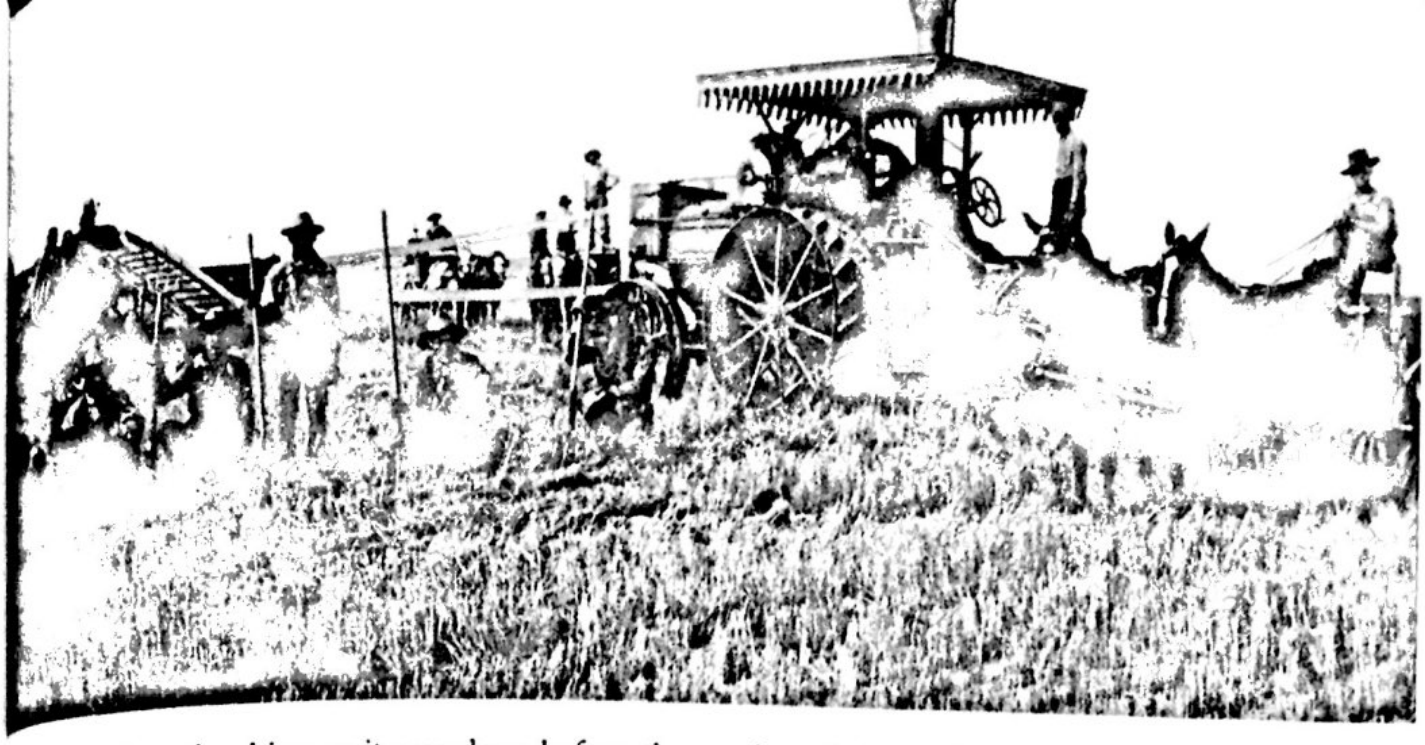
Another new mechanical innovation was the one-way disk plow, which resembled a series of concave plates set vertically on a beam. In the nineteenth century, Western farmers had used a moldboard plow to kill the grass. It dug deep, sliced through the roots, and laid the sod over practically unbroken. The new disk contraption did not go as far down into the earth; it moved along faster, chopped the ground up more roughly to increase water absorption, killed weeds efficiently, and, when used often enough, left a finely pulverized surface layer.[18] Under the dry-farming program, farmers were told to haul their disk plows out after every shower and stir up the dust for moisture conservation. But in droughty years they disked their fields so much that some observers blamed the dust storms of the 1930s on the misuse of this single implement.

There was one more apparatus that completed the industrialization of the grassland: the combined harvester-thresher, or, as it was called more simply, the combine. By the end of the twenties more than three-fourths of the farmers in the winter wheat section owned such a machine. Instead of hiring ten or twenty bindlestiffs—seasonal harvest laborers coming in on the railroad—who drank heavily, frightened the children, required the wife to feed them, and sometimes demanded

higher wages, the farmer bought a combine that he and one or two others could manage. Pulled by a tractor, the combine could cut a 16-foot swath through the wheat, and in two weeks could harvest 500 acres.[19] The grain, threshed as it was cut, poured like a golden stream into the bed of a truck driven alongside; then off it went to the elevators and flour mills of the world.

Machines made money, but they cost money, too—far more than small farmers could afford. From 1910 to 1920 implements on the typical Kansas farm increased in value from $292 to $980, most of the jump due to tractor purchases. That was nothing compared with the thousands of dollars the typical farmer spent thereafter; buying a combine in the next decade, for instance, could add $3000 to one's investment. During the twenties the value of farm machinery in the Texas panhandle almost tripled, totaling $27 million. With a tractor, a Ford truck, a combine, and enough gasoline to run them all, the production costs there had jumped to about $4.00 an acre; if a farmer could raise 10 bushels of wheat per acre and sell them at 40 cents each, he could break even. Since the average price over the 1921-29 period was $1.03 a bushel on the southern plains, and the average wheat yields ranged from 8 to 18 bushels, it was, in most years, a paying proposition. But, as in every instance where new technology has entered, there were hidden, unanticipated effects, not least of them being, especially in the early twenties, a severe economic squeeze for many marginal farmers. The war left them with huge machinery debts to pay. For a while overseas markets remained good, prices stayed above $2.00, and there was no worry. But as the Europeans restored their own agriculture to full productivity, as old trade relations were reestablished, the Great Plains farmer lost some of his world outlet and found himself in a tighter and tighter bind. In every county there were those who could not survive the crunch and went under. On the other hand, as the survivors saw it, their salvation depended on more, not fewer, machines, so that they could achieve greater economies of scale.[20]

There were a few enterprising wheat farmers who welcomed the postwar competitive race to see who could mechanize fastest and shave their production costs to the lowest minimum. By the mid-twenties, as boom times returned, they raked in substantial fortunes. Ida Watkins, the "wheat queen" of Haskell County, Kansas, farmed 2000 acres, and in 1926 she made a profit of $75,000, which was more than President Coolidge's salary. Northwest of her, in Greeley County, was Simon Fishman, a Russian-Jewish immigrant who came to the frontier as a peddler and stayed to become one of the biggest wheat entrepreneurs in the state. Down in the Oklahoma panhandle there was J. H. Gruver, farming 4000 acres in 1928. And to Plainview, Texas, came the Hollywood mogul Hickman Price in 1929 to show the plainsmen what modern farming was really like. He preached the Henry Ford creed to anyone who would listen: "Only through large-scale, collective, group, special-



Wheat threshing as it was done before the coming of the combine. (*Kansas State Historical Society*)

ized, departmentalized activity has modern prosperity, with the accompanying high standards of living, become possible." His factory farm stretched over 54 square miles—34,500 acres—and required 25 combines at harvest time.[21] In every part of the plains there were pacesetters like these men and women who fervently believed that the methods of industrial capitalism were what the land needed. They were the largest and most successful; the less aggressive were forced to follow their lead.

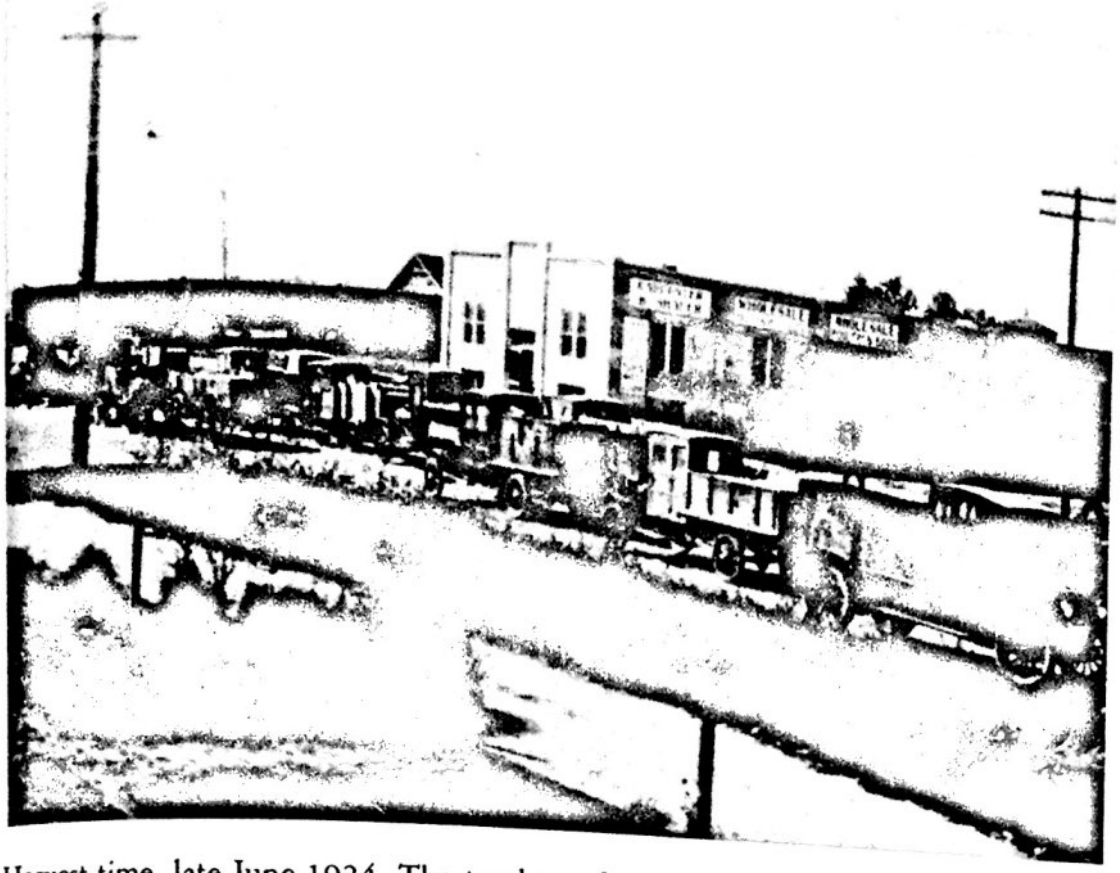
The mobility of the new machines allowed not only large-scale enterprises, but also widely dispersed holdings. It was now possible to drive one's equipment to another county or even to another state, plant wheat, return home in a few weeks, and wait until the next spring before visiting the land again—it was possible, in other words, to become a "suitcase farmer." This was particularly attractive for 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; many of them were responsible men and women, concerned about their investment's long-range security, and technically proficient.[22] But the machine made possible, and common, an exploitative relationship with the earth: a bond that was strictly commercial, so that the land became nothing 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 1920s and on 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 Internationals; each day he and his hired man broke out 20 acres, until virtually his whole section of land was stripped of its grama and buffalo grass. In thirteen southwestern Kansas counties, where there had been 2 million crop acres in 1925, there were 3 million in 1930. During the same period farmers tore up the native vegetation on 5,260,000 acres in the southern plains—an area nearly seven times as large as the state of Rhode Island. Most of the freshly plowed ground went into wheat, so that over the twenties decade the production of that cereal jumped 300 per cent, creating a severe glut by 1931. That was how men prepared for the days to come. When the black blizzards began to roll across the plains in 1935, one-third of the Dust Bowl region—33 million acres—lay naked, ungrassed, and vulnerable to the winds.[23] The new-style sodbusters now had their turn at facing disaster.

Throughout man's history he has now and then upset the ecological order, sometimes because he has had to do so in order to make a new home for himself, sometimes because he has been ignorant. Among all the earth's landscapes he has especially abused the grasslands, due to their climatic ambiguity and their fragility. It would be easy then, to dismiss the American experience on the plains as merely another case of human misjudgment, greed, innate aggression, or stupidity. Man has repeatedly fouled his own nest, some maintain; he is forever capable of considerable violence toward nature, he is everywhere materialistic, and he has never paid much attention to the environmental consequences of his deeds. The historian, though persuaded by such arguments to be realistic about human behavior, cannot be ready to let explanation rest there: it is, in the first place, too comprehensive—what explains all may explain nothing. It is also an excessively pessimistic way of thinking about man and the rest of nature, ignoring as it does the many examples of harmonious relations. The American plainsmen, it must be made clear, were as intelligent as the farmers of any part of the world. They were by no means the first to overrun the limits of their environment. But the reason they did so must be explained not by that vague entity "human nature," but rather by the peculiar culture that shaped their values and actions. It is the hand of culture that selects out innate human qualities and thereby gives variety to history. It was culture in the main that created the Dust Bowl.

The culture of modern, western man rests on the belief that he is autonomous in nature. He is confident that he is a sovereign creature, independent of the restraints that plague other species—not controlled as they are, but in control. That has not been the view of most people in world history, the American Indians being



Harvest time, late June 1924. The trucks and wagons are waiting to unload wheat, which the boxcars will carry to distant flour mills. (*Kansas State Historical Society*)

a proximate case. There has been no more important change in the human condition than the transition from a traditional sense of intimate dependence on the ecological community to the modern feeling of absolute free will and human autonomy. It is not too much to say that our entire industrial world was made possible by that change in outlook. We have no way of being absolutely precise about when and where the change took place, but we can be sure that as late as 200 or 300 years ago the dominant fact in man's life everywhere was his need to adapt to more powerful natural forces. Then, out of western culture, came a revolutionary impulse: a desire to throw off the restraining hand of nature and to assert in every way possible the contriving hand of humanity. If similar impulses occurred prior to that point, none of them was nearly so sweeping or so successful. The human species, it was now believed, stood liberated from a bondage to the earth that men of no previous era had been able to escape.

How can we account for this new, calculated indifference—a thoroughly rationalized and purposeful indifference—toward the natural order? We cannot begin with blanket condemnation, unless we are prepared to hold that absolutely no good came out of the shift in consciousness. But we can attempt to pinpoint the cultural roots of this search for autonomy. Since Americans were the foremost exponents of the new sense of environmental freedom, we are best advised to begin

with our own culture. What produced in this nation so complete an alienation from the community—the interdependent life—of nature? What led the plains settlers to advocate and celebrate ecological aggression, as Charles Wilber did? Why did they take such pride in the name "sodbuster"? Why were they so peculiarly intent on "breaking the land"? What, in short, made them make a dust bowl?

One popular answer to some of these questions came in a 1936 film made for the Farm Security Administration by Pare Lorentz, "The Plow That Broke the Plains." Perhaps no other documentary work of the time had more impact, in its style, above all, but in its argument, too, on thinking about the Dust Bowl. Dorothea Lange, Archibald MacLeish, and John Steinbeck all picked up its images and cadences, and the film was shown in theaters across the nation, including those in the southern plains. It was Lorentz who first focused people's attention on technology as the instrument of destruction. Through newsreel-like camera footage and a rousing musical score by Virgil Thomson, he suggested that it was the machine—the unbridled, reckless force of modernity—that had made the dust storms. Great phalanxes of tractors were filmed, advancing on the land just as World War I tanks had moved across the smoke-shrouded battlefields. But given a new liberal government, Lorentz reassuringly concluded, the same machines could be turned to man's benefit; the conquest of the grassland would be more successful under the enlightened leadership of Franklin Roosevelt. When his cameramen, Paul Strand and Leo Hurwitz, refused to go along with this New Deal puffery, Lorentz stubbornly persisted: "They wanted it to be all about human greed," he said, "and how lousy our social system was. And I couldn't see what this had to do with dust storms."[24] It was the machine that got the blame, and yet, paradoxically, Lorentz argued that the New Dealers would make modern technology man's savior—so long as they could help drive the tractors. Despite its widespread influence, however, Lorentz's film did not begin to deal with the cultural sources of autonomy and aggression that lay behind the dust storms. As cinematic art, it was a triumph; as social analysis, it was wholly inadequate.

Explaining the plow that broke the plains requires one to explain the powerful expansionary and autonomous thrust of American society. The historian traces the origins of this extraordinarily determined push into the grassland to Jefferson's outward-moving democracy and to the shaping of American agriculture by an evolving capitalism. There was no sharp break between the two; both were expressions of the same self-minded, individualistic dynamism that ignored complex ecological realities. But the capitalist ethos was by far the more important, for it replaced man's attachments to the earth, which Jefferson still cherished, with an all-out dedication to cash, it replaced a rural economy aimed at sufficiency with one driving toward unlimited wealth. By the twentieth century American agriculture was moving rapidly into its industrialist phase, bringing Henry Fordism to the

plains. Industrial capitalism, explained Thorstein Veblen, resulted from combining "the machine process and investment for a profit."[25] The productive powers unleashed by that amalgamation were stupendous, vastly unlike anything seen on the earth before. Whether it was shoes or automobiles, cattle or wheat, the new system of production turned out consumer goods in such quantities that it fairly took one's breath away. It led Americans and other societies out of scarcity into an age of enormous potential abundance—more, in fact, than they could consume at home without advertising campaigns and the creation of desires for goods. It was a well-organized and rationalistic system, supremely confident of its unending progress, unashamedly materialistic and utilitarian, critical of those who had failed in the race for spoils, and incredibly wasteful. The attitude of capitalism—industrial and pre-industrial—toward the earth was imperial and commercial; none of its ruling values taught environmental humility, reverence, or restraint. This was the cultural impetus that drove Americans into the grassland and determined the way they would use it.

The more humid parts of America—the pine forests of the Great Lakes and the coal-bearing mountains of Appalachia, for instance—already showed the traces of this economic culture, as Archibald MacLeish pointed out. But it was on the southern plains, where the grass had always struggled to hold the land against powerful winds and recurrent drought, that the self-seeking entrepreneur most clearly displayed his weaknesses. Here on the edges of the fertile earth man needed to summon all the cooperative, self-effacing, cautious elements in his nature to live successfully; Americans, however, because of their culture, found precisely those qualities hardest to nourish and express. It was easier for them to dismiss the grass as unproductive, unprofitable, and unnecessary, and to force the land to grow wheat instead. By the values they had been taught, they were justified in what they did; they were contributors, they assumed, to national growth and affluence. But as it turned out, the culture they had brought to the plains—the culture that had brought them there—was ecologically among the most unadaptive ever devised. That was the message written in darkened skies, shifting dunes of sand, and defeated faces.