

American Agriculture in the Twentieth Century: How It Flourished and What It Cost, by Bruce L. Gardner. Cambridge: Harvard University Press, 2002. x, 388 pp. Charts, graphs, tables, references, index. \$49.95 cloth.

Reviewer Mark Friedberger teaches history at Texas Christian University. He is the author of *Farm Families and Change in 20th Century America* (1988).

For years, agricultural policy was dominated by a consensus that grew out of the Depression. Farm programs, the Department of Agriculture, and Land Grant Colleges benefited the country. The majority of citizens showed little interest in farming. Change came after 1970, when critics began questioning the way agriculture was administered. Bruce Gardner became prominent as a critic of agriculture from the conservative camp. He came from a farm background; he was an undergraduate at a land grant college; and he wrote his dissertation on agricultural marketing. As a young turk in the 1970s he joined a right-wing chorus of agricultural economists urging that market forces should be applied to the cultivation of food and fiber. This book is a summing up—and a celebration—by a now senior agricultural economist of the achievements of agriculture in the twentieth century. The tone is less strident than in his earlier work (such as *The Governing of Agriculture*, [1981]), yet Gardner never fails to remind readers of the faulty judgments (in his eyes) of liberal academics and journalists.

Agriculture has been affected by the conservative revolution in America over the past 25 years. In 1979 Willard Cochrane published his *The Development of American Agriculture*, which besides being a survey of farming from colonial times, introduced the concept of the "treadmill" to explain how farmers adapted or failed under the pressures of modernization. As a liberal, Cochrane, though supportive of farm programs, was critical of the way they were administered, and was especially hard on the way American farmers had treated the land. Generally he was pessimistic about the future of farming, and regretted that farmers were forced out by industrialized agriculture.

By 2000, the ideological climate of agriculture had altered. In the political arena, despite the passage of the "Freedom to Farm" legislation of 1996, which was intended to eliminate farm programs, both political parties still wooed the greatly reduced farm population with generous handouts. The agricultural establishment (the land grant colleges, farm organizations, and the Department of Agriculture) trumpeted the achievements of farmers. They emphasized that economic, demographic, biological, and technological changes had swept away the old structure of agriculture. Technology and efficiency were dominant; a small cadre of large producers allowed farming to grow

food at very low cost. In contrast, critics of the new agriculture were mostly urban based, from non-agricultural backgrounds. Greens were skeptical of technology, distrusted the corporate world, and attacked industrialized agriculture for its environmental record.

Gardner sets out to chart agriculture's path over the past century. Whereas Cochrane used a historical framework to probe the development of farming, Gardner relies on census data and a statistical base. Although agricultural statistics are voluminous, the census continually changed categories. As a result, data organized in a time series, the ideal format for econometric methods, sometimes fail to produce the definitive "scientific" results the author desires.

Three stark facts underpin the anomaly of agricultural change in the twentieth century: there were huge population losses, and huge production gains, while farm acreage remained roughly the same. The most controversial issue in this scenario, the movement of the excess farm population off the land, is viewed differently by liberals and conservatives. The former see small farmers, pauperized by industrialized agriculture, being pushed off the land against their will. Gardner and his market-oriented colleagues celebrate farm loss as an indicator of the market acting efficiently. According to their more optimistic creed, ex-farmers and their families are pulled to urban areas. There they take up nonfarm occupations and lead far more productive lives than on the farm.

Why was agriculture so productive and growth so phenomenal? By 2000, fewer than two million farmers remained in agriculture, and most received the bulk of their income from nonfarm jobs. Gardner shows that sometime in the middle of the Depression farmers began to harness technology to make spurts in growth. In other words, Cochrane's "treadmill" began to take effect. By 1940, the adoption of the tractor and the diffusion of hybrid corn started to transform self-sufficient farms into production-oriented units. The new agriculture required inputs—antibiotics, chemical fertilizers, feed supplements, and huge amounts of fuel—that added to the debt burden of farms (a phenomenon, incidentally, that Gardner ignores). The old diversified operation began to specialize in one or two crops, and often eliminated livestock raising. Similarly, regional specialization became common: the Corn Belt concentrated on corn and soybeans; the West on wheat, and the High Plains on cotton. Obviously, farms grew larger and farm employment changed. Hired hands lost significance; most labor was family-based on "larger than family farms"; contract farming became popular in everything from cranberries to broilers to hogs.

All this change is lauded by Gardner. How do his econometric models explain the growth and higher incomes of contemporary farmers? At first glance three factors seem to play a prominent role: all-encompassing technology; the commercialization of markets; and government intervention. The government was involved in agriculture from the birth of the republic. Much of this intervention—infrastructure that built dams, regulations that controlled packing plants, and information from experiment stations—benefited farmers. At the same time, Gardner questions the role of commodity programs, which some consider the government's most significant contribution to agriculture in the twentieth century. Although commodity supports helped even out fluctuating prices, Gardner argues that they were inefficient and a drag on the growth curve. He maintains that the single most important factor in contemporary farm growth and incomes was the integration of farm people into the nonfarm economy, through off-farm work.

An econometric *tour de force*, this book is unfortunately heavy going for historians. To close, two Iowa references are worth mentioning. First, readers will be intrigued that immersed in the equations, charts, and graphs is a discussion of farming in Cedar County. Second, although the author maintains that the Hart-Parr Company built tractors in Iowa City, in fact it was Charles City.

Fighting for the Farm: Rural America Transformed, edited by Jane Adams. Philadelphia: University of Pennsylvania Press, 2003. vi, 338 pp. Notes, bibliography, index. \$55.00 cloth, \$22.50 paper.

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Eighty years ago most Iowa townships had about 30 families making a living off the land. Farming was diversified, and farmers produced their own seed and fertilized their fields with animal manure. Operators had minimal contact with the government, apart from agricultural agents. After 1930, agricultural industrialization gradually altered those patterns. Government programs multiplied, farms grew larger, small farmers quit, and science transformed daily lives. As late as 1980, Iowa had more than 80,000 farm families whose incomes were derived entirely from the land. But as Jane Adams shows, the downturn of the eighties accelerated earlier developments affecting the way agriculture was organized; genetic modification, integration, and the use of no-till techniques—to name some of the innovations—made agriculture unrecognizable in a short time.

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