Agribusiness

The rapid growth of cities and manufacturing created new markets and opportunities in agriculture. Improvements in transportation and farm machinery plus the continuing availability of good, fertile land facilitated the change from subsistence farming to commercial agriculture. The biggest business in America in the nineteenth century, and the one occupying the most people, was farming, but by the end of the century, farming had become almost exclusively a market-oriented, specialized business.

Moreover, the production of the crop had become but one aspect of the business of agriculture. The merchandising, processing, shipping, packaging, canning, packing, and refrigeration of commodities and foods added as much value to the product as did the original production of the raw commodity. Only by examining the rapidly expanding agricultural economy through the perspective of the businessperson and the profit motive can one feel the pulse of the national economic expansion.

In no commodity was the change so spectacular, and the urban-agricultural connection so evident, as in the cotton industry. The antebellum cotton kingdom comprised more than 384,000 slave- owning planters producing cotton. The cotton kingdom stretched from the farms of Mississippi and Georgia to the country storekeeper, to the south- ern coastal cities of Galveston, New Orleans, Mobile, Charleston, and Baltimore, to the shippers and bankers of New York and Philadelphia, to the manufacturers of Boston and Lowell, and to the factors, bankers, shippers, and merchants of England, France, and Holland.

Cotton was the world's business before the Civil War in the same way that petroleum has become the world's business in recent decades. Plantations and slavery fed the world's seemingly insatiable demand for cotton. Between 1800 and 1860, the consumption of raw cotton in the United Kingdom alone rose from 52 million pounds to over 1 billion pounds. In the same period American production of cotton climbed from 152,000 bales to 4.8 million bales, or two-thirds of the world's supply, handled largely by American merchants and shippers. In 1860, American manufacturers consumed one-third of the total world's supply. Income from cotton, and inescapably from slavery, was shared by businesspersons from the South and from New York and New England, who earned profits from the freight, the sales commissions, the insurance premiums, the ware- housing of raw cotton, and from the manufacture and distribution of finished cotton goods, as well as from the sale and transportation of slaves. The slave trade from Africa to the New World lasted almost four hundred years. That trade produced a unique system of slavery, certainly more exploitative than anything preceding it did. Some 400,000 to 500,000 Africans were imported and sold into slavery in American colonies and states before 1808, and an estimated 50,000 to 270,000 may have been imported illegally thereafter. Herbert Gutman estimated that at least 1 million slaves were sold in domestic markets between 1820 and 1860. The slave trade, as a distinctive institution in the slave system, proved lucrative to Europeans and Americans alike. Most of the slaves provided the labor forces of the southern cotton plantations.2 Cotton, to be sure, was not the nation's only agribusiness before the Civil War. The tobacco, rice, sugar, livestock, lumbering, and wheat industries accounted for more dollar income than cotton, but not one of them alone before 1860, or even 1900, approached the dollar value of cotton.

Each of these commodities involved hundreds of intermediaries for every single producer, creating an intricate web of trade and commerce that stretched across North America to Europe. The cotton plantation employing slave labor marked only the first stage in the business of producing, marketing, and distributing cotton products. THE PLANTER AS BUSINESSPERSON The southern plantation system reflected the commercialism, capitalism, and specialization of the industrial revolution. The plantation was a capitalistic agricultural organization utilizing slave labor under unified direction and control to produce a staple crop.

The small, no slaveholding farmer of the South differed from the planter much as the craftsman or artisan (house- hold manufacturers) differed from the factory owner. Both sought to accumulate wealth: The small farmer and craftsperson-derived profit from their own labor while the planter and industrialist derived profit from the labor of others and from the capitalization of labor and machinery. The small farmer and the artisan remained small businesspersons in part from choice, for there was greater risk in adding land or factories and in hiring or buying labor. Moreover, labor was scarce, and for the artisan and the small farmer often unavailable.

In the South, among the small slave-owners, there seems to have been a direct correlation between the size of a farmer's family and the number of slaves acquired. Up to an indeterminate size, a farmer could maximize profits by having no, or few, slaves. Only when farmers could acquire approximately thirty slaves and hire a manager or overseer could they enjoy the economies of scale offered by the plantation system. At this point, the planter lost the relative security of subsistence agriculture and entered almost wholly into the market economy.

Slave labor was likely no more efficient than free labor, but it did reallocate output from nonmarket to market commodities. While the farmer's strategy was to produce as much bread and meat (corn and hogs) as possible and "afterwards as much cotton as possible," the planter could only efficiently utilize labor and optimize profits by maximum output of cotton (or sugar, tobacco, or rice).

The smaller the farm, the larger the allocation of land and labor to corn. While the planter derived efficient economic returns from subsistence crops or corn, beyond a certain point the cultivation of subsistence crops resulted in diminishing returns of land, labor, and capital. Some plantations achieved a high degree of self-sufficiency in terms of food production.

Thus, there was not only some truth but considerable economic justification for the statement that "in their great eagerness to get money, the planters have brought themselves into a state of dependence on their neighbors for many of the necessaries of life which formerly were raised at home.

A large-scale industrial estate with a specialized product, the plantation utilized the division of labor and managerial functions. The planters served as owner and frequently the business manager of the plantation, although they often shared the latter role or delegated certain authority to a factor or business agent. The overseer was the production manager who most frequently allocated his labor based on tasks rather than hours. The slave labor force was divided into task groups or gangs headed by a driver or crew boss, sometimes a slave. The field gangs performed specialized functions such as plowing, hoeing, and seeding. The plow gangs were most often men; the hoe gangs largely women.

Skilled artisans, such as bricklayers and blacksmiths, were assigned individual tasks and the assistance of helpers who were trained in those crafts. Women, and some men, were assigned as domestic servants, cooks, and weavers. The elderly and young often served in "trash gangs," cleaning, carrying water and provisions, and in lesser tasks. Men, women, and children worked as "pickers." When the fieldwork was done, the slaves worked as teamsters, barrel and stave makers, ginners, or cooks, or they were simply "laid-by," but the interval between the fall harvest and spring groundbreaking was short.

The profitability of slavery on the cotton plantation was examined and debated. Some studies estimate that southern slave agriculture was 35 percent more efficient than the northern system of family farming, while others conclude that slavery was inherently unprofitable. The results are inconclusive but the cruelty was never in debate.

The better judgment might be simply to observe that slavery could provide a very profitable and efficient system of agricultural production and that as in any business, there were those who did well, those who did less well, and those who failed. The vagaries of climate and disease, the fallibility of the manager and the owner, and the total independence of the market in terms of both prices and credit costs made commercial agriculture then, as now, a hazardous but potentially profitable enterprise. Much of the profit from farming, in any era, has always gone to the intermediary, the banker, the processor, the distributor, and the shipper.

WILLIAM JOHNSON—THE BARBER OF NATCHEZ

Free "men of color" lived and worked within the pale of black slavery in the South, and some achieved distinction and wealth as planters and business people. William Johnson, born a slave, was freed by his white father at the age of five and apprenticed to his brother-in-la. James Miller, the black proprietor of a Natchez barbershop. At the age of nineteen William opened his own shop in Port Gibson, Mississippi, and at the end of twenty-two months re- ported an income of $1,094.50.

In 1830, William purchased the lease and equipment of Miller's shop in Natchez when Miller moved to New Orleans. In 1833, Williams purchased the building for $5,500, paying one-half in cash. The next year Johnson's annual income exceeded $2,500, and he had acquired three slaves of his own. At twelve and a half cents for a shave, and two bits for a haircut, Johnson's shop stayed busy.

In addition to his barbering, Johnson loaned money to his white customers, bought and sold anything of value, operated a toyshop, a coal and sand business, and speculated in farmland. He traveled extensively, including visits to Philadelphia and New York, with frequent excursions to New Orleans, where he gambled, played billiards, entertained "the ladies," and traveled about in hired carriages. Johnson married in 1835, and the couple eventually had ten children.

In 1839, he built a three-story brick building to replace his shop and rented a portion of it to a businessperson for $1,000 annually. He opened several "branch" barbershops around the city, and established a separate public bathhouse. He built two additional commercial buildings in Natchez that were leased variously to a bootmaker, druggist, grocer, and tenpin alley operator; these returned about $600 in annual rentals.

While Johnson primarily bought and sold farmland, he operated farms at different intervals, leasing them to white tenants on shares, hiring white and black laborers, and using a few slave laborers. During "slow" periods, Johnson hired out his slaves to other planters. Johnson usually raised corn, vegetables, fruit, cordwood, wool, hogs, and cattle for the local market, rather than cotton.

William Johnson maintained a daily diary, about his business affairs, from 1835 until his death in 1851. He recorded the financial and social activities of Natchez, and the local gossip of blacks and whites. He left behind a substantial estate, ten children, and a good reputation in the Natchez business community.

Source: Edwin Adams Davis and William Ransom Hogan’s' The Barber of Natchez (Baton Rouge: Louisiana State University Press, 1954).

THE COTTON FACTOR

The marketing of the cotton crop involved a diverse assortment of intermediaries and processors. After the harvest, the planter, if he owned a gin, ginned and baled his crop. If he did not, he took his crop to a neighborhood gin where the crop was ginned on a toll basis with payment in cash or kind. The cotton was then delivered in wagons, which might or might not be hired, to a factor or commission merchant, whose business was to market the crop and supply goods on credit to the farmer or planter.

In smaller communities, the country store often served as an intermediary between the farmer and the factor, the merchant taking cotton at an agreed-upon price in exchange for cash, or more often simply crediting the planter or farmer's account. The factor, located in inland cities such as Augusta, Macon, Atlanta, Nashville, Columbia, or Shreveport, accumulated cotton from his customers' accounts. This included storekeepers, planters, and farmer. It was marketed on a commission basis, frequently at 2.5 percent of the gross receipts, sometimes directly to a buyer, but most frequently to an associate or factor located in a coastal city such as New Orleans, Savannah, or Charleston, where a cash market existed. The inland factor added to his costs the insurance and freight charges to the port city.

A factor in New Orleans might buy the cotton outright as an agent for mills in Massachusetts or England, or for the account of yet another merchant or factor in New York who bought or accepted a consignment with the intention of obtaining a better price in England or Europe. Again, shipping, insurance and handling, and credit charges were costs of doing business. Since the production and marketing of cotton involved a long-term process, credit and financing were generally of lengthy duration, ranging from six to twelve months. Thus, the inland factor who advanced credit to the farmer, planter, or merchant borrowed from the coastal factor, who in turn received credit from his New York or Liverpool merchants.

New York merchants were particularly successful in dominating the cotton trade because they were able to extend long-term credit to the southern factors, whereas English and European credit, and that of major southern banks such as in New Orleans, was usually available only on a 60- to 90-day basis.

Moreover, imports of finished and manufactured goods were received at New York and northern ports for redistribution to southern and western markets. Therefore northern capital and northern businesspersons and shippers remained as crucial to the cotton trade as such merchants had been integral to colonial commerce, and much of the "income from cotton flowed to the North and West."

Cotton receipts, derived from the actual sale, transport, commission fees, insurance, or finance charges, comprised a major portion of the banking business of the United States in the North and the South before the Civil War, and both necessitated and facilitated the rapid spread of commercial banking. These banks usually loaned money to the factor, rather than directly to the planter, although the planter's notes, endorsed by the factor, often served as the collateral for the loan.

The factor effectively served as the planter's business agent and banker, maintaining the planter's accounts, advising him on markets and prices, and serving as well as the planter's purchasing agent for goods, supplies, and often land. The factor continued to fill this role throughout the nineteenth and into the twentieth century.

OTHER SOUTHERN AGRICULTURAL INDUSTRIES

Despite the omnipresence of the cotton economy, the "cotton kingdom" requires a sobering perspective. Tobacco, sugar, and rice in most of the antebellum years retained a market value at least equal to one-half of the receipts from cotton. Corn, in fact, was the chief staple crop of the South, usually exceeding three times the acreage in cotton.

In 1855, for example, the value of the southern corn crop ($209 million), exceeded that of cotton, tobacco, sugar, and rice combined. Unlike the other commodities, little southern corn reached the marketplace; the people and their animals consumed the bulk. On the typical antebellum no slaveholding farm, corn constituted the principal crop.

Rice production and marketing in the antebellum period changed little from the practices of the colonial era. The industry did expand from South Carolina into Georgia, and on the eve of the Civil War considerable rice production existed in Louisiana along the Mississippi River. Louisiana, too, was the primary source of sugar, with some planting existing in Florida, Georgia, and Texas.

A Louisiana sugar plantation was in reality both a farm and a factory where the cane was grown and the sugar refined. Investments in sugar plantations paralleled and often exceeded the investment in rice plantations, and both far exceeded the capital requirements of cotton production. Charles Roland estimates the average value of sugarhouses at $50,000, with many exceeding a $100,000 investment.

Ditching, drainage, and harvesting required more arduous and expensive labor, and often special or dangerous tasks were assigned to hired labor gangs, rather than hazard valuable slaves. While the risks from weather, disease, and capital investment were large, the sugar planter often accumulated substantially greater wealth than the cotton planter did.

The tobacco industry remained the mainstay of the economies of Virginia and Maryland as it had been during the colonial period. Tobacco was a labor-intensive crop compared to other staples; and as a laborer could most efficiently be assigned to two or three acres of tobacco as compared to ten or twenty acres of cotton, tobacco plantations were correspondingly smaller, and family farms produced a considerable portion of the total tobacco crop.

Overproduction and fluctuating prices of tobacco, in contrast to the generally stable and upward trend for the price of cotton, created relatively higher risks and lower returns for the tobacco planter. The greater depletion of soil nutrients by tobacco, as opposed to cotton, necessitated crop rotation and diversification. As time passed more of the tobacco crop entered the domestic market for manufacture and consumption. Plug, snuff, and cigar manufacturing employed some 11,000 workers in Virginia in I860.

Many southern farmers, particularly in Virginia but throughout the antebellum South, raised wheat as a commercial crop before the Civil War. Most of the wheat entered local markets, but Virginia produced large surpluses for export. Like wheat, the corn-hog industry was a widely diversified, small-farm enterprise in the South; but again, most of the pork entered local markets rather than being a factor in interregional or international trade.

The cattle industry became a more viable commercial enterprise in the decades before the Civil War on the prairies of southwest Louisiana and southeastern and central Texas. There, the range-cattle industry, where family groups on open ranges grazed herds, provided slaughter cattle for New Orleans and the eastern markets. Edward Pipes foreshadowed the great drives of later days by driving a herd of Texas cattle to Illinois in 1846, and herds moved with some regularity from Texas to Missouri and Illinois in the 1850s.

Earlier, cattle moved eastward along the Old Government Road to Fort Smith and Little Rock, Arkansas. Other trails led from Dallas to Shreveport, with extensions to Natchez and Vicks- burg. The Opelousas Trail started near San Antonio, Texas, and followed a coastal route to New Orleans and Mobile. Cattle ranching in the Americas began with the conquistadors and continued to be a large-scale business in Mexico and Texas.

Richard King, a steamboat captain, began the famous King Ranch in 1852. The foundations of the lucrative range-cattle industry were well established before the Civil War.

While cotton dominated the antebellum South, the southern agricultural economy contained a diversified and many-faceted agribusiness. Many southern and northern farmers did not participate in the market economy, but were more typical of the Jeffersonian yeoman, self-sufficient farmer.

NORTHERN AGRIBUSINESS

Commercial agriculture in the Northeast remained more diversified and on a smaller scale than in the South until the 1850s. Arable land was often scarce, and farm labor, outside of the immediate family, even more so. Wheat, hogs, flax, wool, and dairy and meat products enjoyed intermittently good markets. Northeastern farmers generally prospered throughout the Napoleonic Wars, and into the 1820s, when northern agriculture became increasingly market oriented and farming became more specialized.

By the 1830s eastern and New England agriculture largely succumbed to the competition of Midwestern farmers, or diversified into vegetable, fruit, and dairy farming for the rising urban markets. The development of commercial agriculture in the Midwest directly affected the rise of manufacturing in the East, and the expansion of the cotton kingdom into the Old Southwest. The relatively low cost of shipping grain and meat down the Mississippi River and its tributaries allowed the cotton and sugar plantations of the Southwest to devote more land and labor to growing products for the commercial market and less to provisions. This resulted in the production of larger quantities of cotton at lower prices for the New England textile market and facilitated the expansion of manufacturing.

The more favor- able costs of production in the Southwest, deriving from lower-priced foodstuffs and land, not coincidentally made the fertile southwestern cotton lands more competitive within the older eastern cotton plantations and stimulated the western movement of cotton. In turn, settlement and agricultural expansion in both the lower and upper Mississippi River valley established new markets for manufactured goods. This was from the Northeast, promoting an interregional flow of trade from Midwest to South to East.

The opening of the Erie Canal in 1825, and the growth of steamboats and railroads in the 1840s, facilitated the basic counterclockwise flow of trade from the Midwest to the South to the Northeast. This opened new arteries of trade, particularly in allowing the bulk products of the Midwest, predominantly wheat, pork, and beef, to flow directly to eastern markets and ultimately to enter European trade.

Once grain and farm products from the Midwest entered eastern markets at competitive prices, commercial agriculture in the East could no longer compete. This, coincidentally, freed eastern labor for employment in the manufacturing centers where the growing urban populations created yet greater demands for the farm products of both the South and the Midwest. Country merchants in the northern as in the southern states served as the principal contact between the farmer and the marketplace before 1820, and they continued to play a significant role until the Civil War.

A merchant who accepted produce in exchange for commodities usually assembled small lots of produce and consigned them to a commission merchant in a larger city or sent them to the wholesale supplier for credit on his account. As transportation to interior points improved, commission firms and mills began to send cash buyers to farm communities, and the country merchant's exchange services declined accordingly.

Hog and cattle marketing developed from a local barter economy into a mass-marketing structure by the 1850s. Integral to large-scale marketing was the drover, who might be a local dealer or a buyer from the city. The drover obtained financing, assembled herds from scores of small producers at a few cents per pound, drove the herds to such packing centers as Chicago or Cincinnati, and sold at a profit to a packer or buyer. The railroad replaced the drive, but not the drover, who became the local live- stock dealer shipping the herds by rail.

Specialists in the handling and warehousing of grain appeared in Rochester, St. Louis, Cincinnati, Chicago, and other points in the Midwest by the 1840s. As large-scale commercial farming developed, and rail service to milling centers became available, farmers were able to make direct carload shipments to a commercial warehouse or elevator. Because of the expansion of canals and railroads, improved agricultural technology, and the growing urban markets in America, wheat became the North's greatest agribusiness.

THE WHEAT INDUSTRY

Until about 1815 Pennsylvania, Virginia, and New York led in the production of wheat, and New York City emerged early as the leading milling center. The opening of the Erie Canal first stimulated the expansion of wheat production in New York, but soon it contributed to the rapid shift westward, with Illinois becoming the leading wheat producer in 1860, while Rochester, New York, had become the principal milling center.

By the 1870s wheat production had shifted farther westward with Ohio, Indiana, Minnesota, and California the leading states, and by the turn of the century the heaviest volume came from the Dakotas, Nebraska, Kansas, and Minnesota. The westward movement of wheat involved not only the development of improved transportation systems but also new agricultural technology.

Prior to the 1840s wheat farming remained largely a small-scale family- farm enterprise, partly because of the necessity and expense of clearing land, and partly because of the expense of hiring labor for the harvest. Wheat, unlike cotton, required harvesting in a very brief period, usually five days from ripening. One person with a cradle could harvest almost three-quarters of an acre in a day, and if hired, received wages of $1 to $3 per day. In addition, the person using the cradle had to be followed by someone raking the wheat into sheaves and another binding the sheaves. Thus, the real scarcity and the high cost of labor greatly circumscribed the scale of wheat farming until mechanical harvesting began to replace hand labor.

McCormick's Reaper Cyrus P. McCormick's invention of the reaper did for the wheat industry what Eli Whitney's gin did for cotton. McCormick developed his reaper in 1831, and he entered into mass production of the machine at a plant established in Chicago in 1848. The reaper could harvest up to 15 acres of wheat per day, and this efficiency allowed large-scale wheat farming to develop. The reaper, followed by mechanical binders, steam threshers, and harvesting machines, revolutionized the industry, and it in turn created new agribusinesses such as the farm-implements business that McCormick- Deering (International Harvester) long dominated.

Cyrus McCormick, born in 1809 in Rockbridge County, Virginia, grew up while observing his father's repeated failures at perfecting a mechanical reaper. Following an unsuccessful field trial of his father's last attempt in 1831, Cyrus developed a machine utilizing a saw-toothed cutter bar and a reel, rather than beaters, to force the stalks into the cutter. Although he perfected the machine over the next few years and secured a patent in 1834, he made no attempts to produce it for sale but instead farmed and built a furnace for the production of pig iron. The business prospered for a while, but in 1839, it failed. Hard times drove him to attempt to market his reaper, and he made his first sale in 1840.

In 1844 he sold fifty reapers, all of which he built in the blacksmith shop on his farm. McCormick soon encountered opposition from a rival machine built by Obed Hussey, and after some skirmishing over patents (which Cyrus lost). Hussey retired from the field, being overwhelmed by McCormick's business genius.

McCormick began production of his reaper in Chicago in 1847 when he contracted with a wheat-cradle manufacturing firm, Gray and Warner, for the construction of the reaper. Gray became a partner of McCormick's, and a new plant was built the next year. The partnership soon dissolved, however, and Gray sold his interests to William B. Ogden and W. E. Jones. In 1849, McCormick bought Ogden and Jones's interests for $65,000. By 1850, at least thirty firms manufactured reapers utilizing many of McCormick's features. Unable to extend or protect his patent rights, McCormick's success came through manufacture and sale of machines, rather than from control of patent rights, licensing agreements, and royalties. McCormick adopted standardized parts and mass production on an assembly line. His Chicago plant, which had the capacity to manufacture forty reapers per day, succeeded in producing 4,000 machines in 1856. He heavily employed advertising, guaranteeing satisfactory performance or the money back, and he staged competitive field trials against all comers.

Moreover, he offered easy credit terms, with $35 down plus freight from Chicago, with the balance of the $ 125 due December 1, at 6 percent interest from July 1. Credit, then a novel and risky marketing device, proved tremendously successful.

At the close of the Civil War, the Marsh harvester challenged and overwhelmed McCormick's reaper. McCormick regained a competitive stance in the implement business with the production of the wire binder, invented by Charles B. Withington in 1877. The binder removed the last vestige of hand labor in the harvesting of wheat. Cyrus McCormick died in 1884, leaving behind a thriving business and a market war between the Deering Plow Company and McCormick's Harvesting Company, which was resolved by the intercession of J. P. Morgan and Company and the organization of the McCormick-Deering International Harvester Company in 1903.

Equally important to advanced harvesting technology were the improvements in plows and cultivators. John Deere perfected the steel-faced, moldboard low in 1837, and James Oliver produced a less expensive but equally good chilled-iron plow in 1868. The improved plows made possible the breaking of large acreages of tough prairie sod in the Midwest and Great Plains, where the sticky sod either broke or clung to conventional iron plowshares. Concurrent with better mechanical devices, improved plant varieties made possible larger yields in the more arid plains.

Most of the wheat grown before the Civil War was a variety of "soft" wheat that required more moisture. Traditional stone mills or burrs easily milled it. It produced a very white, soft flour. The soft wheat varieties were generally susceptible to disease, such as rust, and to drought. Daniel Fife of Ontario, Canada, first introduced "hard" spring wheat to America about 1841.

The hard varieties, which had been grown first along the Volga River in Russia and then in Scotland, were particularly drought and disease resistant and suitable for cultivation on the western plains. Although use of hard wheat varieties spread rapidly in the 1840s and 1860s, the flour had a dark color and was not easily milled. Flour from hard wheat sold at a 10 to 15 percent discount below soft-wheat flour until improved milling techniques lightened the color of the flour and gave hard wheat an advantage over the soft. Flour from hard wheat retained higher protein and vitamin content and absorbed more water, making the flour particularly attractive to bakers.

Inception of the Rolling Mill

The first porcelain (later steel) rollers in the Washburn-Crosby flourmills in Minneapolis—introduced by Minnesota Governor C. C. Washburn in 1878—solved the problem of milling hard wheat and removed the final obstacle to its cultivation on the Great Plains. The total dollar value of such commercial crops as corn, hogs, vegetables, dairy products, hay, and wool exceeded the value of wheat, but no one crop matched the profit from wheat.

In the twenty years between 1849 and 1868, annual wheat production rose from 100 million bushels to 288 million bushels, and it continued to expand. By 1860, the subsistence homestead had all but given way to farm businesses that stressed specialized agriculture for the marketplace. The expansion of the railroad and food-processing industries provided the vital link between the city and the farm.

In 1860, northern urban markets consumed about one-third of domestic wheat production, southern markets about 20 percent, and local markets about one-third, with the remaining 15 percent exported. During the Civil War, foreign sales rose markedly and continued thereafter to absorb an increasingly large percentage of total output. The number of mills and the production of flour grew dramatically after the Civil War. By the 1880s severe competition and a real excess of milling capacity created convulsions in the milling industry that led to bankruptcies and the consolidation of mills.

In 1889 British investors accomplished the merger of C. A. Pillsbury and Company with the Washburn Mill Company (owned by W. D. Washburn and not to be confused with the Washburn-Crosby Mills), creating the then-largest flour concern. Size, how- ever, proved no assurance for profit, and the company failed to declare a dividend during most of its twenty-year existence.

The Pillsbury group triggered the consolidation of six Minneapolis mills into the Northwestern Consolidated Milling Company in 1891, and the organization of the Minneapolis Flour Milling Company in 1892. In that year, major New York mills merged as the Hecker-Jones-Jewell Milling Company and six California mills created the Sperry Flour Company. Thomas A. McIntyre, a New York miller and promoter, attempted to organize a trust in 1898 designed to control the production and prices of spring- wheat flour. His United States Flour Milling Company sought to acquire thirty-one mills producing 200,000 hundredweight of flour daily.

Mclntyre did obtain control of companies having a combined capacity of 77,000 hundredweight, but he failed to acquire control of the Northwestern Consolidated and Hecker-Jones-Jewell enterprises. The would-be trust went into receivership in 1900 and was subsequently reorganized as the Standard Milling Company.

At the close of the nineteenth century, some four or five hundred milling companies existed. Most of them were family-owned and located in or near the major production areas. All were fiercely competitive, and none marketed more than 5 percent of the trade. However, the trend toward consolidation had become evident. It would increase rapidly after 1900, when sharp changes occurred in the marketing of wheat products. Per capita wheat flour consumption in the United States experienced a decline of almost 20 percent between 1900 and 1920; foreign sales rose sharply during World War I and then collapsed after the war.

Moreover, the rise of commercial bakeries and grocery chains altered the marketing patterns for flour products and interposed powerful business conglomerates between the miller and the ultimate consumer. The changing business structures in the milling and food-processing industries is confirmed by the observation that by 1970 Kellogg Company, General Mills Incorporated, General Foods Corporation, and Quaker Oats Company shared 91 percent of the market for ready-to-eat cereal products. As in many businesses, the food-processing industry experienced consolidation, diversification, and specialization.

THE CATTLE KINGS

Lewis Atherton, historian and author of The Cattle Kings, finds the most significant feature of the American range-cattle industry to have been the cattleman, not the cowboy. Cattlemen were more significant as marketing specialists rather than producers. Texas and cattle became synonymous even before the Civil War. Texas longhorns were driven to Missouri, New Orleans, and even New York City before that time.

Raising cattle in Texas, many believed, was a sure way to wealth, and entrepreneurs came from every walk of life, and from many foreign countries. Pennsylvania, Rhode Island, England, Scotland, Ireland, and Germany were just some of the places Texas ranchers once called home. Some did achieve wealth, but most did not. In addition, if they did, many lost it again.

Charles Goodnight with his partner Oliver Loving blazed the famous Goodnight-Loving trail in 1866. From Texas through New Mexico territory into Colorado, they survived Indians, stampedes, and water shortages to net in excess of $12,000 on that one drive. Goodnight quit herding in 1869 to turn to ranching near Pueblo, Colorado. He invested much of his wealth in real estate and banking, only to be eliminated in the financial panic of 1873.

Joseph G. McCoy was another Texas herder who was bankrupted in the 1873 panic. McCoy and most cattlemen operated heavily on borrowed money. Cattle prices were unusually high in 1872, and exceptionally large herds were accumulated by the cattlemen in anticipation of greater profits. These herds began moving north in the spring, only to find that the market at Abilene, Kansas, and other rail terminals was glutted. Cattle herds driven north in 1872 had been held over on local ranges in anticipation of the higher spring prices.

Moreover, the corn crop in 1873 fell unusually short and buyers were hesitant to purchase cattle that could not be fattened. More cattle and fewer buyers brought collapsed cattle prices. Banks were forced to foreclose on their loans to cattlemen. McCoy estimated that Texas cattlemen lost over $2 million in that one market season. Scores of ranchers were bankrupted, including McCoy.

Money was a scarce commodity in the Southwest, and interest rates often ran from 2 to 3 percent per month. George Littlefield, for example, decided that banking was preferable to cattle marketing after having to pay 24 percent interest on his cattle investment in 1869. Littlefield subsequently made a habit of operating on a cash basis, and this led him by accident rather than by design into banking.

In a word, the range-cattle industry was a highly speculative business that attracted a diverse group of entrepreneurs, and in which success hinged on the vagaries of weather, feed supplies, water, interest rates, railroad rates, and vigorous competition.

FOOD PROCESSING

The development of specialists in the processing and marketing of foods occurred over a long period of time and had a close association with improvements in transportation and urbanization and with changes in dietary habits. Until the 1830s, most foods were preserved by salting, spicing, or pickling, smoking, and drying, and, indeed, throughout the nineteenth century these processes remained widely used.

Ice was rarely employed as a refrigerant until a few decades before the Civil War, although George Washington and Thomas Jefferson constructed icehouses on their estates in the 1790s. Cellars, springhouses, and food "safes" provided temporary storage for meat and dairy products. Until the 1860s most meat, poultry, and fish arrived at the city markets alive, to be slaughtered and cleaned in the city.

Dairy products and vegetables went from the farm to the market to the table in a matter of hours, or not at all. Until the advent of the railroad, the "garden district" of the city had to be within or in close proximity. The railroad immediately expanded the food-growing ring to a radius of several hundred miles. It became possible, and because of dietary changes increasingly desirable, to obtain fresh vegetables and dairy products.

The more sedentary life of the urban dweller made the traditional consumption of high-calorie, high fat diets—such as the southern rural diet of meal, molasses, and pork or the Midwestern diet of hog meat and hoecakes— less satisfactory. Dietary reforms stressing vegetarian diets swept the country after the 1830s. American diets were also strongly influenced by the French fashion for dairy products and vegetables, iced drinks, and ice cream.

The use of ice as a refrigerant expanded rapidly after 1830, largely because of improved techniques in harvesting and shipping natural ice. Nathaniel J. Wyeth invented a horse-drawn ice cutter, patented in 1829. Drawn like a plow over a field of ice, it greatly speeded the harvesting of evenly cut squares. Steam-driven endless elevators fed the blocks into large icehouses, which then shipped commercial quantities of ice by ship and rail to cities in the North, South, and even overseas.

New Orleans's consumption of ice, for example, rose from 375 tons in 1827 to 24,000 tons by 1860, and in the latter year, New York City consumed over 100,000 tons of ice. Iceboxes for preservation became prominent in urban homes by I860.26 Until the Civil War refrigeration was limited to the shipment of sea- food and dairy products, and even then for relatively short distances. Beef and pork still entered the city markets on the hoof—or salted, pickled, and dried.

Cincinnati emerged as a major pork-packing center in the 1840s, to be eclipsed by Chicago in the early 1860s. Chicago opened the Union Stock Yards on Christmas Day 1865 and experienced a surge in beef packing and fattened live-beef shipments to the East. However, Midwestern slaughtered beef products did not begin to enter eastern markets in significant quantities until Gustavus F. Swift began commercial shipments of slaughtered beef to Boston markets in ice-refrigerated cars about 1877. Armour and Company and other packers in Chicago, soon followed, and the day of mass marketing of processed meat products had arrived.

The efficient processing of meat products, however, did not depend solely on the railroad, refrigeration, and the development of mass-consumer markets in the cities; it depended as well upon the growth of industries utilizing the by-products of the meat packers. In Chicago, for example, lard and tallow provided the raw materials for independent businesses manufacturing soap, lard, and illuminating oil.

A brush manufacturer had utilized animal hair by 1860, glycerin and gelatin production occurred by 1867, and substantial fertilizer industries and glue factories had developed by 1871. Tanning, leatherworking, saddle and bridle, and boot and shoe manufacturers absorbed hides from the packing industries, creating successful businesses and in turn making the packing industry more profitable and efficient.

The canning of perishables developed in Napoleonic France in the early 1800s. William Underwood, who came to Boston from England and established a small cannery using glass or ceramic jars and specializing in seafood, introduced it to America about 1819. Thomas Kensett, also from England, established a similar cannery in New York, and in 1825, he patented a method employing tin cans instead of jars.

In 1856, Gail Borden developed a process for condensed milk and during the Civil War obtained contracts to supply the Union army. In 1860, canners marketed some 5 million cans of commercially produced foods, but not until the twentieth century did, canned-food products represent a major form of food processing.

By the 1880s, specialized marketing structures developed to handle the distribution of processed foods in national and international markets. The Great Atlantic and Pacific Tea Company (A&P), which incorporated before the Civil War, became a leading distributor of foods through retail outlets of chain stores after the war. Kroger (1882) and the National Tea Company (1899) were among those businesses that made possible the rapid and efficient distribution of foods to the burgeoning urban centers.

Agribusiness—implying the specialization and commercialization of the production and distribution of foods and commodities—made possible an increase in per capita food and fiber consumption, despite large increases in population, and the even more dramatic shift in population from rural to urban areas.

NOTES 1. Gavin Wright, The Political Economy of the Cotton South: Households, Markets and Wealth in the Nineteenth Century (New York: W. W. Norton & Co., 1978), p. 3. 2. Herbert G. Gutman, Slavery and the Numbers Game: A Critique of Time on the Cross (Urbana: University of Illinois Press, 1975), p. 126; James H. Dorman and Robert R. Jones, The Afro-American Experience: A Cultural History through Emancipation (New York: John Wiley, 1974), pp. 71-82. 3. Lewis Cecil Gray, History of Agriculture in the Southern United States to 1860, vol. I (Washington, D.C.: Carnegie Institution, 1932; reprinted, Gloucester, Massachusetts: Peter Smith, 1958), p. 302. 4. Wright, The Political Economy of the Cotton South, p. 64. 5. Ibid., pp. 43-88. 6. Stuart W. Bruchey, ed., Cotton and the Growth of the American Economy, 1790—1860 (New York: Harcourt, Brace & World, 1967), p. 64. 7. See Robert William Fogel and Stanley L. Engerman, Time on the Cross: The Economics of American Negro Slavery (Boston: Little, Brown, 1974); and Gutman, Slavery and the Numbers Game. 8. Bruchey, Cotton and the Growth of the American Economy, pp. 221-227. 9. Ibid., pp. 226-227; and Douglass C. North, The Economic Growth of the United States, 1790-1860 (Englewood Cliffs, New Jersey: Prentice Hall, 1961), p. 113. 10. Charles P. Roland, Louisiana Sugar Plantations during the American Civil War (Leiden, Holland: E.J. Brill, 1957), p. 3. 11. Paul Wallace Gates, The Farmer's Age: Agriculture, 1815-1860 (New York: Holt, Rinehart & Winston, 1960), pp. 100-107. 12. See Sam Bowers Milliard, Hog Meat and Hoecake: Food Supply in the Old South, 1840- 1860 (Carbondale: Southern Illinois University Press, 1972); and Forrest McDonald and

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