CHAPTER 5—COTTON

Ned Doxey, cotton cropper.

The high cost of poultry production makes Jim Avery a borderline case from the standpoint of profitable farming; without off-farm work and past savings, he would not be nearly as well off as he is. Many farmers do not have these advantages, and many of them are still lower down on the economic scale.

Ned Doxey is one. Ned grows cotton in that wonderfully productive area in northwest Mississippi where the Father of Waters has deposited layer on layer of soil as rich as that laid down by the Nile in Egypt. He and his wife Sarah are both descendants of slave families on plantations lower down on the river before the Civil War. They have never been outside of Mississippi and don't want to be. But their two older boys, Lester and Howard, live in New York, and their daughter Miranda has just married a young Philadelphia preacher, and a third son, Adam, has made it clear that as soon as he gets old enough he is going to leave and get a job somewhere else too.

The striking progress made in American agriculture has passed by Ned and Sarah Doxey, as it has some 1¼ million other families making up well over a third of the 3.3 million commercial farmers in the United States; unless you want to say that the better opportunities opened to Lester and Howard and Miranda are an indirect outcome of changes in agriculture, which is true, since in the old days the young Doxeys would probably have stayed where they were.

Two-thirds of the cotton farms are small.

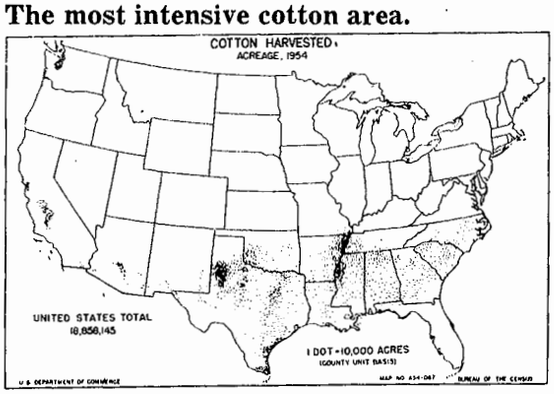
These 1¼ million families are the ones earning less than $2,500 a year from the sale of farm products. The Census divides them into two groups. A farmer is listed in Economic Class V if he earns $1,200 to $2,499 from the farm. He is in Economic Class VI if his farm earnings are between $250 and $1,199, provided he does not work 100 days or more off the farm during the year or receive more income from outside sources than from farm sales, in which case he would not be considered a commercial farmer by the Census but a part-time, noncommercial farmer.

Farms growing cotton

	Percent
1 bale or less	16
2 bales or less	29
3 bales or less	39
4 bales or less	48
5 bales or less	55
6 bales or less	60
7 bales or less	69

The farm families with incomes under $2,500 are scattered pretty well all over the United States, but there are more of them in the South than anywhere else. Nearly two-thirds of the 525,000 commercial cotton farms in the United States in 1954 were in that category, and there were more cotton farms than any other type at the Class V and Class VI levels. Most of them are in the old Cotton Belt States east of the Mississippi River.

The most intensive cotton area.



The part of Mississippi where Ned Doxey lives is in the Delta area, one of the main cotton regions in the United States. This long narrow strip is now more intensively planted to cotton than almost any other part of the country; more than 8 out of 10 farms grow cotton and about 87 cents of every dollar of farm income is from cotton sales. The cotton farms include some of the best and the biggest, but also half of the smallest, with the lowest incomes. In fact 53 percent of the cotton farms there were in Classes V and VI in 1954, but they produced only 19 percent of the Delta area cotton. By contrast, less than 3 out of every 100 cotton farms were in Economic Class I (over $25,000 a year farm income), but they accounted for more than 26 of every 100 bales produced.

Most of the cotton growers in Ned's economic group in the Delta area are Negroes and more than a third are croppers. A cropper is different from a crop-share tenant who pays a share of the crop in lieu of cash rent but normally provides his own equipment, livestock, feed, and so on. The cropper furnishes none of these things. He gives half the proceeds of crop sales to the landlord, who in turn furnishes not only house and land but power, equipment, feed, and usually half the fertilizer. The cropper contributes only his labor. In effect, he is a hired worker who shares the risk of crop and price failures but is reasonably sure of having a roof over his head, though it may be a leaky one.

Typical cropper family.

Of 28 acres in the farm Ned Doxey works, 17 are in harvested cropland—about 11 in cotton, most of the rest in corn. He normally produces considerably less than a bale to the acre, and it is practically his sole source of income; few cotton farmers in this region have any outside work and very few croppers earn more than a pittance from selling any product other than cotton. Ned's total farm income in 1954 was a little over $1,700. Half of this went to the landlord. Out of his own share he had to pay around $160 for his half of the fertilizer bill and some extra help at cotton picking time. His year's income, then, was about $700 plus a four-room house rent-free, wood he could cut for the kitchen stove, an outdoor toilet, a shed for a couple dozen chickens, another for some of the landlord's farm equipment, a pigpen in which he sometimes had a pig, and space for a garden where he could grow some vegetables.

Because he is a cropper and not a cash-rent tenant farmer or an owner, Ned's situation does not fairly represent that of Economic Class V farmers in general. Many would have been somewhat better off financially, even after deducting expenses, which in Ned's case were met almost entirely by the landlord.

A meager home and a meager diet.

The Doxeys' small frame house was old, and not in very good condition, but it was home, and Sarah kept it neat and clean. Up to a short time ago they still used kerosene lamps; now they have electric lights but no other conveniences except an antique car bought secondhand years ago and a radio which the two older boys sent them the Christmas after the electricity went in. Sarah nurses a secret hope that some Christmas the children might chip in for a washing machine.

Sarah is a good enough cook, but the diet of the Doxeys does not give much chance for variety. Cornbread and syrup and salt pork are staples; eggs, unless they are sold to get a little cash; some fresh meat for a while when a pig is killed; now and then a hen in the pot, or occasionally a fried chicken; blackeyed peas; sometimes collards cooked with a bit of salt pork. Perhaps the limited, rather meager diet is one reason why Ned and Sarah seem older than their actual age, the midforties. This is younger than the median age of farmers in the United States, but people in the Doxeys' position tend to die young, having few of the comforts of life, sketchy medical care, and too little education to know much about the fundamentals of health. Neither Ned nor Sarah got through grade school. The three older children did, and young Adam, influenced by the preacher brother-in-law, even thinks he is going to go to high school.

Changes are on the way.

Some of the Doxeys' neighbors do better from the food standpoint. There is a growing awareness of the inadequacy of the traditional diet, and some landlords believe it pays to help their cropper families get a cow, pig, and chickens, have an adequate garden, and raise some hay and feed. It is good for the landlord, good for the tenants, good for the land. This attitude is part of the widespread change that has been going on in the South, but Ned's landlord has not yet got around to it.

The changes that have occurred in cotton production result from the efforts of growers to cope with problems of great magnitude and difficulty, of which three are outstanding: the problem of labor, the problem of the boll weevil, the problem of competition. All of them together have brought a series of interrelated adjustments that are by no means ended.

Before 1793 cotton was an impractical curiosity because separating the fiber from the seed by hand involved so much labor. Then Eli Whitney invented the cotton gin to do the work mechanically. The United States became the world production center, England, the manufacturing and trading center, for a vast industry.

Cotton demands much labor.

The production of cotton was voracious in its labor demands. Preparing the soil, planting the crop, weeding, chopping (thinning) all required a huge amount of work; and worst of all was picking the cotton by hand, careful fingers pulling the lock or bunch of fiber from each boll as cleanly as possible with a minimum of adhering trash. This problem was solved first by indentured labor, then by importing slaves from Africa and developing the plantation system.

The boll weevil arrives.

The abolition of slavery in the sixties nullified that solution and made it necessary to start over again. The South went through an agony of readjustment, and it was many years before cotton production was again functioning smoothly, with the cropper system to provide an ample supply of cheap labor.

In 1892, just 99 years after Eli Whitney knocked down one hurdle, an inconspicuous little insect not more than a quarter of an inch long ambled up from Mexico to set up another. The boll weevil has a wicked, piercing snout. It feeds almost entirely on the cotton plant. It likes to travel in search of its favorite food. The female lays her eggs in the squares (blossoms) or the young boll, which then falls off the plant in six or seven days. She lives only a month at most, during which she lays up to 300 eggs. There may be as many as seven generations in one season.

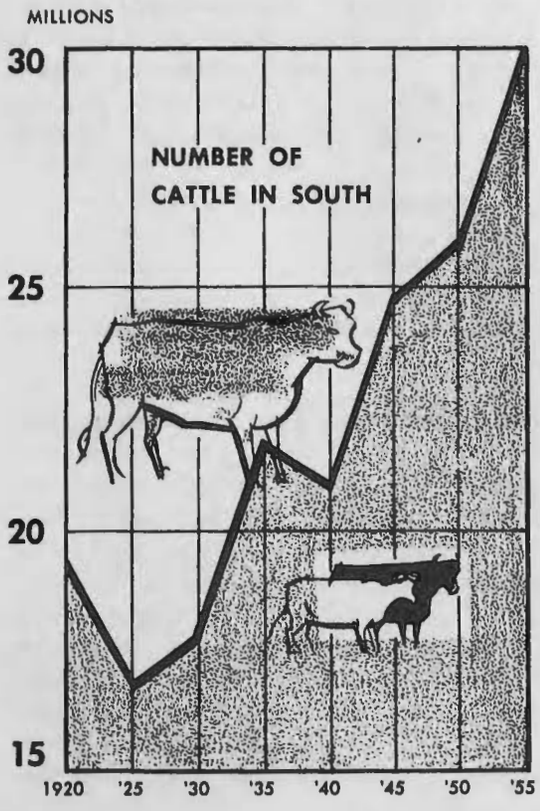
And brings tragedy.

Within 30 years after the first weevil immigrant crossed the border near Brownsville, Texas, the insect had overrun almost the whole Cotton Belt. The results were catastrophic. Production dropped 25, 50, even 90 percent a few years after the little weevils wandered into an area. Growers went bankrupt, farms were abandoned, banks failed, trade and industry stagnated, credit dried up, workers went north. This was the plight to which a small persistent insect reduced a land solely dependent on a single crop, America's greatest cash crop and one of her main exports.

Changes caused by an insect.

As the South eventually adjusted to the changes brought about by the Civil War, so it has been adjusting to this situation. Partly because the boll weevil does not survive cold winters or thrive in dry areas, it did not become established in western cotton-growing regions (they have pests of their own, however); so production has tended to move northward in the original Cotton Belt and westward across Texas and Oklahoma into New Mexico, Arizona, and California. Georgia, the Carolinas, Alabama, Louisiana, and Arkansas are now far less dependent on cotton than they used to be. In fact only in Mississippi and Alabama is cotton still the major source of farm income; in the former case largely because of the natural advantages of the hill and alluvial areas in the northwestern part of the State. Even in Mississippi, however, the larger-scale growers are diversifying their production considerably, adding more livestock, hay, soybeans, and other crops, though such changes have hardly begun to filter down to the little fellows like Ned Doxey.

A blessing in disguise.



Elsewhere in the Southeast other types of farming—livestock, peanuts, broiler production, for example—are taking hold more and more extensively to replace cotton. In Georgia, 81 percent of the farms were producing cotton in 1930; in 1954, only 48 percent. In South Carolina in the same period the percentage dropped from 83 to 61 percent, in Louisiana from 80 to 46 percent, in North Carolina from 54 to 29 percent. Not only has farming improved as a result of these changes; the region has also been developing industrially so that in many areas there are increased opportunities for nonfarm employment. The South may be compared to a man who has had a bad heart attack. If he survives, he may be healthier and stronger than ever and also take better care of himself. The shock of boll weevils or heart attacks may be looked on as warnings of something basically wrong that needs to be corrected.

A challenge that brought progress.

Also, through various cultural practices and the use of insecticides, scientists and growers have learned much more about combating not only this insect but a host of others that seem to find the cotton plant especially delicious. Some of the newer insect poisons are particularly effective. Growers like Ned Doxey watch the cotton patch carefully for boll weevil infestation, and if it is bad enough, plod up and down the rows with small hand or wheelbarrow or one-mule dusters. The bigger-scale growers use multiple-row tractor-drawn equipment, or if the acreage is large enough, contract to have the dusting done by airplanes, a swift and rather hair-raising operation with small planes skimming a few feet off the ground strafing the insects with clouds of poison at the rate of 350 acres an hour. Even so, boll weevils have not been eradicated, and in the weevil territory cotton yields are more uneven from year to year than before the advent of the weevil; and the guerrilla warfare is expensive, adding a good deal to the cost of production.

Advance of mechanization.

Use of large-scale equipment for insect and disease control is part of the accelerating trend toward mechanization of cotton growing. In the earlier days when labor was plentiful and cheap there was no need to mechanize production; in fact it might have created a tremendous problem of surplus workers. Also, there was no use in mechanizing soil preparation, planting, cultivation, weeding, thinning as long as an army of pickers had to be on hand to harvest the crop as the Doxeys do by finger-power, trailing a long bag into which they stuff the white fluffy locks, and managing to pick, say, 150 pounds of seed cotton a worker a day, which means about a third of that much lint after ginning. Then the field has to be gone over perhaps three times to get the later-ripening cotton. Ned does well if he can do an acre in less than 70 hours.

Cotton picking the biggest hurdle.

Man-hours for harvesting 1 acre of cotton

Delta, Miss.:	
Hand picking	100
Machine picking	5
High Plains, Texas:	
Hand snapping	24
Machine stripping	1.3

Farther west in Texas and Oklahoma they developed a faster method, snapping the whole boll off the plant instead of carefully picking the locks from the bur. By snapping, a worker can average perhaps a hundred pounds more seed cotton a day than by picking; but since it includes much more trash, the grade is lower. Then in 1914 someone in northwest Texas got the idea of attaching a piece of picket fence to a sled and dragging it through the field. The plants got caught between the pickets and the cotton was stripped off as the sled moved along. Gradually this crude device was elaborated and perfected until today tractor-mounted mechanical strippers are widely used in western areas where level land is well adapted to machinery.

Development of the mechanical picker.

Though efforts to develop a mechanical picker (as distinguished from a stripper) go back to 1895, they were not operationally and commercially successful until a few years ago. The Census does not collect figures on either strippers or pickers, but their use has been rapidly increasing where cotton is grown on large acreages and the topography is suitable. This is particularly true in the West, but the Delta region too is using mechanical pickers. The revolving steel spindles of this machine, which are kept wet, are pushed into the cotton plants on both sides; they catch and wind the fibers of the lock much as you might wind a lock of hair around your own finger, and persuasively tug it out of the boll. Then the fiber is mechanically doffed from the spindles and lifted or blown into a container. A one-row picker can cover as much as eight acres a day and harvest as much as 5,000 pounds (10 bales), the exact amount depending on

Completely mechanized production possible.

yield and other conditions; and a two-row machine picks 50 to 75 percent more. Sometimes the cotton grades are lower than hand-picked, but even so the machine saves time and money.

There are certain requirements. The plant should be specially adapted to machine picking (breeding takes care of that) and it should be completely stripped of leaves before the picking begins or the cotton would be mixed with green trash very hard to eliminate. The latter requirement has been met by development of chemical defoliants, which are dusted or sprayed on, sometimes by airplane, and make the leaves drop as effectively as the coming of winter.

These developments furnish another example of the combination of biology, chemistry, mechanics—agriculture and industry—nature and man—which is so potent a mixture for solving and creating problems. The mixture is finally bringing cotton—which, with tobacco, is about the last holdout—into the fold of mechanized production. Cotton can now be produced and harvested like corn entirely by machine, without the use of hands except at throttles and levers.

The present significance of this revolution, at least for United States producers, is perhaps connected chiefly with that third major problem, competition, which we have not yet defined. It has two aspects. First, the competition of other cotton-producing countries has in recent years been cutting deeply into United States export trade on the basis of lower prices. Second, synthetic fibers, notably rayon, have progressively been capturing a larger and larger share of the fabrics market from the "natural" fibers. Experts generally agree that if cotton is to regain any of this lost ground, or forestall further losses, it must be on the basis of lower production costs and the development of fabrics with qualities equal or superior, in the consumer's judgment, to certain special qualities of competing synthetics.

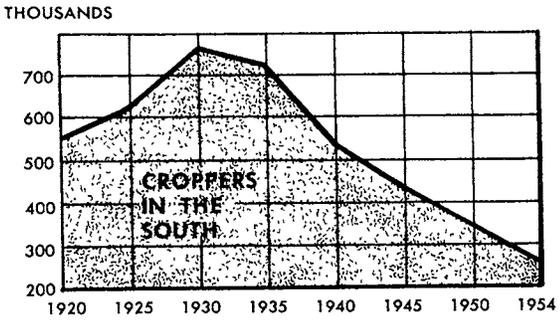
The westward shift.

Cotton is moving West. Unless adequate small-scale equipment can be developed, mechanization will probably continue to pull cotton westward away from the eastern areas of hills and small fields (and boll weevils) to the level western land admirably suited to large-scale machinery. Half of the cotton crop in 1954 came from Oklahoma, Texas, New Mexico, Arizona, and California, and in at least three-fifths of the area it was grown under irrigation, which produces exceptional yields. The number of cotton farms had been reduced during the past 25 years or so in a number of the eastern States. The contribution made by cotton to the farm income of these States decreased accordingly. By contrast, in California, cotton contributed only 4 percent of the farm income in 1929 but more than 12 percent in 1954; in Arizona, 38 percent in 1929, 50 percent in 1954; in New Mexico, 17 percent in 1929, 38 percent in 1954. In the High Plains area of Texas the acreage in irrigated cotton doubled between 1950 and 1954. The consequence was a sharp decrease in total acreage but an increase in production—and in the number of Economic Class I cotton farms.

The Delta region where the Doxeys live is very much in this picture and has been adapting to changed conditions and practices. The bigger farms, some of them a thousand acres or more, use tractors for plowing, planting, cultivating, thinning; tractors or airplanes for dusting; mechanical pickers; and in some cases, flame for weed-

ing, Mississippi having been the first State to try this method with cotton. "Multiple Units" (plantations using the cropper system) are in some cases being reorganized into single units using hired labor instead of croppers—a development made possible by machinery. In 1954 the acreage in cotton in Mississippi was 51 percent less than in 1929, the period just before Government price supports and acreage controls began, but production was only 17 percent less.

A past that is disappearing.



Meanwhile only one out of four farmers in the Doxeys' economic group owns even a mule, let alone a tractor. Ned and Sarah belong to a past that for better or worse is disappearing. Even between the two most recent Agriculture Censuses, 1950 and 1954, the number of cotton farmers in Mississippi decreased by 18 percent—mostly the little fellows. Perhaps in a sense the Doxeys too are adapting to changed conditions, through their children, who have new horizons and a new outlook; but as individuals Ned and Sarah are chips circling in an eddy off from the main current. Busy about 200 days of the year, they are idle the rest. The opportunities for outside work where they live are limited. Always they are desperately poor. When they die the tradition of generations will be broken; there will be no more of their direct line on the land.