Chapter 19 - AGRICULTURE

Human History's Greatest Event...The Pattern for Conquering Hunger...Changes of Attitude...More Engine Power, Bigger Farms, Fewer Farmers...Way of Life, or Business?...Part Timers...Individual Decisions...Expectations

With a front seat from which to watch the parade of agricultural progress for nearly eight decades, I have witnessed what I call the most splendid single event in all human history, an achievement of which the general public remains vaguely if at all conscious. I have seen American farmers, with their scientific and engineering allies, create a pattern for the complete conquest of hunger on earth.

Famine, starvation, hunger, malnutrition and under-nourishment have plagued masses of people since before any history was recorded. The threat and the reality still hover over human millions. These can now be overcome. They will be overcome, unless excessive population increases prevent it, or unless communism stifles individual incentives.

Farmers in the United States have shown how it can be done. First of all, they have taken command of massive resources of energy by way of internal combustion engines and electrical power. Second, they have applied myriad advances by science to improve productivity. Third, they have educated themselves and their children so that they can appraise, understand and utilize new knowledge and new skills.

When the twentieth century began one farm worker did well to produce enough to feed barely a half dozen people. By 1980 one worker could feed eighty. Many farm workers already are feeding more than one hundred.

The creation of a pattern that can conquer hunger every-where does not mean that United States farmers can feed all the world; nor does it promise that their specific methods can be transferred without change to other climes.

The pattern, that's the key word, includes research, education and adaptation. The underdeveloped country that aspires to feed its own people amply can copy a few of the steps directly. Scientific research can determine the capacities and limitations of soil and climate, discover or breed the types of plants and animals that will flourish best. The nation will have to train leaders and to educate farmers and farmers' children. It will have to consider economic factors; how much labor is available, how fast machines and costlier techniques can be afforded. Honest, intelligent efforts of a generation, or two generations, may be required. The fastest route will begin with educating and inspiring young people.

The pattern will not always be easy to follow. If followed wisely, it will always work. Wherever soil, sunshine, water, energy, intelligence, incentives and individual freedom can be combined, food in ample quantities can be produced.

Here in our country the validity of that pattern is demonstrated each day. American consumers have at their constant command the greatest abundance and variety of high quality foods ever available to all anywhere. An ordinary family can eat better than could kings a century or so ago. They can enjoy this blessing at a fraction of what poorer food costs, in terms of work hours, in most of the world. Farmers have been triumphant soldiers in the war on poverty.

The stream of progress which has culminated in the great pattern has grown from a quiet but moving brook at the turn of the century into a majestic flood. The last two generations of farmers have made most of the growth. Advances have gone forward in so many salients, in such variety of places and time and manner, that all cannot possibly be mentioned here. To comprehend the whole, though, one must examine part of the process.

A nineteenth century farmer was likely to look upon "book farming" with skepticism. He had his reasons. The periodicals that he read printed many unproven theories. His agricultural experiment station bulletins used language that was hard to comprehend.

The sons and daughters of farmers, attended one-room district schools during four or five winter months, and few advanced beyond the fifth reader. In spring, summer and fall, the boys' muscles were needed in the fields. Once they had mastered reading, writing and simple arithmetic, their further education was likely to be considered superfluous or even dangerous. It might lead the boys away from farming. This viewpoint was understandable, since nothing was taught about agriculture, not even that it was respectable. Teachers were inclined to encourage a bright boy with talents to "be something better than a farmer."

Until well after the first decade of the new century these attitudes changed slowly. Now they have vanished. The new county agricultural agents found ways to demonstrate that scientific techniques produced profits. Reluctant farmers soon followed practices that they could see were making money for their more progressive neighbors. Greater leaps came when the 4-H Clubs for farm boys and girls and vocational agricultural teaching in rural high schools produced a new generation of open minds. The vast majority of men running today's farms were once 4-H or vo-ag boys. The time lag between the announcement of a scientific finding and its application by farmers has become almost too short to measure.

The one-room country school has given way to the large centralized school which offers better teaching, better equipment and broader social contacts. The country youngster who reached high school was formerly the rare exception among many; now all can go to high school, and most can go on to college if they wish.

The big change from muscle power to engine power, completed between 1920 and 1950, forced and accelerated other changes. The man who farmed 154 acres -- the average operation as late as 1930, had to buy more horses and hire an extra man if he wanted to expand. With the engines that year by year became more powerful and versatile, he needed only to buy or rent more land. Indeed, the engines demanded more land if they were to pay their way.

One consequence has been that the average farm now exceeds 350 acres. Another, exerting a powerful impact in the national scene, has been drastic reduction in numbers of human laborers, the old hoe hands of the cotton fields and the more versatile "hired men" of the north. Millions migrated to the cities, often without sufficient skills to earn livings. Moreover, thousands of capable farm-raised young people had to leave, not necessarily from preference, but because they lacked the capital essential for land and equipment.

As the inputs of human labor declined, the inputs of capital mushroomed. To make the new machinery produce maximum profits, farmers have not only expanded acreage, but have invested heavily in commercial plant foods, chemical herbicides and insecticides. A feature of the "revolution" that would most astonish an old time farmer is that his grandsons may regard animal manures, once a main reliance for aiding fertility, as a waste and nuisance, hardly if at all worth the trouble of spreading over the fields. They buy chemical fertilizers cheaper. They also employ more precise and more effective, herbicides to control weeds, and pesticides to reduce insects and plant diseases.

For their livestock today's farmers add to their grain, hay and silage minerals and biotics and "boughten" preparations to enhance health and nutrititive value. Breeders continue to provide farmers with animals that use feeds economically. The salable output from animals and their products has doubled since 1920, an improvement even greater than the 85% increase in per acre crop yields.

"Farming is not a business; it is a way of life." So we were gently told for generations by people who preferred some other way of life for themselves. A measure of truth in the statement did apply to thousands of families who liked the land better than the towns and who were able to eke out, in most years, a few dollars beyond subsistence. Although they were in relative poverty, they actually were able to live more richly than their urban counterparts. The old concept has had to be abandoned. Farming still is a way of life, and an excellent one. When, however, investments of fifty thousand to a quarter million dollars are involved not much question remains as to whether it is also a business.

Preserve "the family farm" has long been a shibboleth of politicians and sociologists as well as a realistic concern for a majority of farmers. The family farm is preserving itself. It continues to be the prevailing agricultural unit, albeit a much larger one than formerly. The corporation-owned and operated farm, which

is the alternative, has grown but slowly in numbers, though its contribution to total output is substantial.

The farm family often incorporates itself for business advantages. Along with the heavily capitalized farmers who operate large tracts a new type has emerged, the part time farmer whose enterprise is smaller. He has a job in a factory, service station, store, as a teacher or school bus driver, in other public service, wherever his talent fits and the job is available. He may drive thirty miles or more to reach his employment. His wife, too, may be drawing pay for off-farm work. After hours and on weekends, with mechanical equipment, he can run a small farming operation, with or without livestock. With two or more incomes, the family may accumulate capital for larger scale farming, or for launching their own business in another field. More than half of all farmers now take in more cash from other sources than from the land.

Consolidation of farms has made available numbers of substantial country houses -- pleasant, habitable places where families can be reared in sensible surroundings. These now are mostly occupied by "rural non-farm" families, a census category that has become more “‘numerous than those classed as farm families. Both the part-time farmers and the rural non-farmers owe their special opportunities, in part, to good roads and motor vehicles.

Operation of open-air recreational facilities is expanding as a rural, non-agricultural income source. Areas of low fertility, especially those that city people can reach, can be managed for camping, fishing, hunting, skiing and other forms of play and vacations for which visitors will pay.

The number of farms counted by the census as late as 1935 was 6,812,350. Now fewer than three million are reported. The farm population totals have fallen from nearly thirty-five million to fewer than ten million. From the long ago day at the nation's beginnings when farmers were 90% of the people, now they are less than three percent.

These survivors in agriculture are the people who have created the unprecedented pattern for the universal conquest of hunger. Their assets equal a quarter of a trillion dollars. Behind each farm worker stands some $30,000 or more in assets. The output per man hour of labor has increased, even since 1950, two and half times as much as the non-farm man hour output, 6.6% a year against 2.6%.

Except as funds have been provided for scientific research and for education, government can be given little credit for what farmers have accomplished. One might add a negative point, that acreage restrictions actuated farmers to strive for higher yields in order to maintain volume and net income resulting in continuing surpluses.

Government action has, impinged but slightly upon farmers' right to choose; acreage limitations have always left open other options that not infrequently were discovered to be preferable to whatever was denied.

The great leaps forward have been accomplished by individual farmers acting upon their own initiatives -- aided, it must always be emphasized, by engineers who have improved the machines and by geneticists, biologists, chemists and allied scientists.

Does one exaggerate to say that the pattern American farmers have created is really the greatest achievement in the records of humankind? Other advances have opened the way. But did invention of the wheel stop hunger? Did the invention of printing stop hunger? Did the discovery of the western hemisphere stop hunger? None did; none by itself could have; but in the United States farmers have shown the way. Latin America, Africa, Asia, need only to study and to imitate the pattern: with research, education, incentives under individual freedom, they will be able to foreclose on hunger. Then, once their foods are plentiful, their industrial futures can unfold.

To watch this stupendous and historic accomplishment by American Farmers has been a privilege. I feel fortunate to have been born at the time and to have been allowed the vantage point from which to have seen and to have been associated with the greatest of all mankind's advances.