

TWO HUNDRED YEARS OF FARMING IN LANCASTER COUNTY

By LEVI B. HUBER

PENNSYLVANIA'S farming has been diversified and fairly well balanced for two centuries. The first agricultural report of the Province was made in 1685 by William Penn himself. He reported the growing (in his colony) of wheat, rye, oats, buckwheat, rape, hemp, flax, tobacco, grass, peas, beans, cabbage, turnips, carrots, cauliflower, asparagus, onions, garlic, potatoes, peaches, melons and grapes. It will be noticed that nothing is mentioned about Indian corn in this report; yet, a year later, in 1686, another report says that tons of wheat, in addition to corn, tobacco, skins and furs, were exported by Pennsylvania farmers. Farmers in the colony also "had great stocks of cattle, hogs and horses, sheep in considerable numbers, and chickens, ducks and turkeys," while many others were increasing their stock so as to "get into dairying as soon as they could."

It seems that although the development of a foreign market by the settlers was desirable from the beginning, yet they none the less appreciated the importance of developing their home trade. William Penn not only strongly favored this course, but "preferred a domestic, or self-subsistence, to a life of much profit by foreign trade." Favorable reports of the increasing prosperity of the colonies reached Europe and brought hundreds of immigrants to Pennsylvania, who adopted the farming occupation of the colonists. Thus, the State's agricultural resources were established on a broad and diversified foundation.

The coming of large numbers of immigrants caused the city of the Penns to increase rapidly in population. A good home market for certain truck crops, and especially dairy products, made this branch of farming exceedingly profitable. The rich bottom lands, in some sections, furnished good pasturage for the herds of dairy cattle which were needed to supply the demand. Dairying was already a flourishing industry in the outlying districts of New York city; so it was quite natural for the settlers adjacent to Phil-

adelphia to engage in this lucrative branch of agriculture. The dairy industry in the counties near to Philadelphia has continued to the present day, even in the face of strong competition from sections that were thought to have superior natural advantages of production.

The first settlers of Lancaster county were too far removed from Philadelphia for successful dairy farming in view of the then limited transportation facilities; soon, however, farmers conceived the idea of raising beef cattle, which could be made to transport themselves to market. This branch of farming soon proved its profitableness. Stock-growing—especially the fattening of beef cattle—has been a leading feature in Lancaster county's agricultural activities from early colonial days, and has continued to the present. "Livestock" continued to be the backbone of Pennsylvania farming for many generations. Yet in recent years the trend has been decidedly downward in the number of horses and cattle (other than milk cows). It is a well-known fact that since facilities for transporting milk have been so greatly improved, dairying has assumed vast proportions in some sections of our county. The custom of feeding beef cattle during the winter months has prevailed among our Lancaster county farmers for so long a time that it has become a synonym of good farming. The large and important stockyards and cattle market of Lancaster are a direct result of the successful development of the beef cattle industry of this section. It is worthy of note that in sections to which some of our Lancaster county farmers migrated after this industry was well established here, this cattle-feeding custom and its accompanying soil-improvement program were taken along. So we find to this day in Ontario, Canada, Maryland, Ohio, Virginia, and other states, sections where "steer-feeding" is quite general. The agricultural conditions prevailing in Pennsylvania just before the French and Indian War, and later the Revolutionary War, must be understood fully to appreciate the fine services rendered by the pioneers of *better farming*.

Farmers in the general vicinity of Philadelphia contributed more to the early knowledge of farm improvement than the farmers of any other sections of the original thirteen colonies. It is evident that at the time of the first colonization of Lancaster county,

by the German and Swiss farmers, agricultural activities in the neighborhood of Philadelphia were already well under way. The system of farming at that time in vogue was beginning to deplete the fertility of the soil. Ways and means for soil improvement were being sought by the more progressive farmers of this section. The story of how these farmers broke down prejudices, overcame ignorance, and withstood all kinds of ridicule, in order to restore fertility to soils exhausted from continuous cultivation, would make an interesting chapter in the history of agricultural Pennsylvania.

The first record we have of the use of artificial fertilizing was that of Judge Richard Peters, of Philadelphia, whom George Washington described as the best practical farmer of Pennsylvania. In the early colonial days, the only way settlers had of improving their soils was by the use of barn-yard manure; by this is meant the refuse from the stables. It must be remembered that the spacious barns found on our Lancaster county farms to-day had their inceptions from the earliest settlements. The straw from the grains, corn stalks, and refuse from the stables of these great barns, were thrown promiscuously into the barn-yard to be trampled under the feet of fattening cattle during the winter. The barn-yards were cleaned once a year (after harvest), and this refuse was spread over the fields and plowed under the soil for wheat. The farmer who had a large barn-yard full of manure to haul out, after harvest, was looked upon as a model, and, consequently, as a prosperous land owner. I say land owner unreservedly, for to own a farm was the ambition of nearly everyone, as the records of history bear out.

When the livestock industry developed farther west, thousands of steers were driven over the Allegheny mountains and bought by the Lancaster county farmer to be fattened for the eastern markets. There developed early in our history a craft that was known as "drovering." Some of the drovers became famous in "livestock" matters, and frequently became large land owners and had extensive steer-feeding enterprises of their own. In our own day they would be known as cattle barons. Is it any wonder that when any mention of improving soil by other means than by

the use of this well-tested barn-yard material was even hinted at, it was frowned upon in no uncertain terms?

Another industry that flourished in connection with the cattle industry was the manufacturing of whiskey, a by-product of which supplied a cheap feed. Following the "Whiskey Rebellion of Western Pennsylvania," after the Revolutionary War, the distilling of whiskey from rye and corn was a profitable business in this part of the State, from 1780 to 1792, and from 1800 to 1830. During that period Lancaster and York counties excelled all other Pennsylvania counties in the manufacturing of whiskey. It is evident, however, that York county ranked first in this industry. The approximate number of distilleries in the county in 1782 was 343. Shortly after this period there was a decline, for from 1792 to 1800 none was reported. From 1801 to 1810 the distilling industry, apparently, had a boom, for in the latter year 519 distilleries were reported. By 1820 the number had again decreased to 349.

The breeding of draft horses to supply the demand for the increasing trade of "teaming," during this period, was quite profitable. This meant that the well-to-do farmers had, at least, one or more six-horse teams on the road a part of the time hauling farm produce and merchandise to and from distant markets. That this was remunerative is indicated by the opposition of farmers, in general, to the introduction of railroads. The colorful and impressive six-horse Conestoga wagons and their equipment were not to be given up without a struggle.

While this was going on in our own county, our fields were, at least, holding their own as to fertility. Newly opened forest lands were brought under cultivation year after year. Crop rotation was also established. This, together with the immense amount of barn-yard refuse already mentioned, diligently applied to the land, and the remarkable fertility of the soil of Lancaster county, due in part, at least, to this system of farming, early, even before the Revolution, made it famous as the most fertile section of the then known farm lands of the New World.

While Lancaster county's prosperity as to soil was increasing, the soil about Philadelphia was already showing signs of depletion of its fertility. In 1796, we find this account written in the History of Delaware county: "Our land is mostly good, but we have aban-

done our old methods of farming." Then the writer goes on to say that the farmers have fallen away from a system of summer fallowing that had proven so successful in former wheat culture.

To Judge Peters, previously referred to in this article, credit is due for bringing about a reformation in soil improvement heretofore considered impractical and even ridiculous, according to accounts. It was known that barn-yard manure was good as a crop producer, and consequently nothing could take its place. As the supply of this material was limited, farmers were facing a serious problem. It should be remembered that as late as 1773 only a very limited quantity of clover seed was grown in Pennsylvania. Its value as a soil renovator was just becoming known about Philadelphia.

Meager information regarding the value of land plaster as a fertilizer had reached Philadelphia from Germany, where an observing laborer had accidentally discovered the beneficial effects of this chemical on worn-out soil. Judge Peters was determined to give the idea a test. He accordingly purchased a bushel of the plaster (gypsum) from a maker of stucco ornaments in Philadelphia, and applied it to a strip of land on one of his farms. This marks the beginning of chemical fertilization of soils in Pennsylvania. At first, according to the records, the efforts of Judge Peters were rather discouraging. It was the same old story, he had to overcome ridicule and prejudice from his less progressive neighbors. But he persisted, and not many years passed before his example was followed by others, as his farms were the best examples of the usefulness of land plaster; and, later, lime, in America.

It should be remembered, however, that for quite a period previous to this time, New England settlers had already learned the value of fish as a fertilizer for corn. Fish were later mixed with wood ashes in the making of artificial fertilizing material. We have no record of Pennsylvania farmers using this combination for fertilizing their lands at this period, although they did so later.

Judge Peters, and other progressive farmers, were aided in their efforts by the fact that gypsum had been brought occasionally to Philadelphia and Wilmington as ballast in ships. This material

accumulated at the wharves, since its value as a fertilizer was not generally known. Load after load of this material was hauled from these ports to the near-by farms of progressive land owners, before 1800.

Red clover seed was now being sown more extensively, year after year, and its value recognized as a means of improving poor soil. One of the leaders in popularizing red clover was James Vaux, of Montgomery county, who was among the first to grow it extensively.

Soil exhaustion had become an acute problem even before the Revolutionary War. Many fields which had produced originally from 25 to 35 bushels of wheat per acre, yielded less than one-third that amount after 50 to 75 years of cultivation. Soil deterioration became especially noticeable after 1750. In fact, it is said that large tracts of land in the Philadelphia area were abandoned for agricultural purposes and left unenclosed.

It appears that an old English law, in force at that time, required all land used for agricultural purposes to be enclosed with substantial fencing, if individual rights upon it were to be respected. It is reasonable to suppose that the elaborate system of "fencing in" all private lands for which the south-eastern section of Pennsylvania has been noted for so long a time, had its inception in this law. The fence problem was a serious matter in Lancaster county's agricultural activities until quite recently, when much-needed legislation relative to individual rights regarding privately owned lands, whether enclosed by fences or not, came into being.

The use of gypsum having broken down completely the prejudices against the application of chemicals to the soil, and the further fact that red clover was almost universally recognized as a soil builder, went a long way toward a permanent soil improvement program. Although gypsum had worked miracles on many fields, it was soon discovered that repeated applications did not give the same good results. Lime, on the other hand, was found to be much superior and continued to prove more beneficial in every way and to increase in favor, so that by 1825 one of the soil-fertility students of the day could report: "It is owing to the extensive and continued application of lime, combined with a better system of farming, that much of the soil (in the vicinity of Phila-

delphia) has been brought from an exhausted condition to its present state of fertility and productivity."

The first lime kiln in Chester county was built in 1806. Apparently, soon after that date kilns were constructed in the vicinity of limestone outcrops throughout the south-eastern portion of the State. Our own Lancaster county farmers, doubtless, got their cue of first using gypsum (as meager traditions reveal) from their more eastern neighbors. At any rate, we find that the use of lime by the Lancaster county farmers progressed rapidly after its introduction. This was further intensified by the abundance of wood and unlimited supplies of a good grade of limestone for the purpose.

In the beginning, wood was the fuel used to reduce the limestone into lime. At first, the stone was hauled to the farms and burnt at a point convenient to the fields. This accounts for the fact that the remains of old kilns are sometimes found at quite a distance from limestone quarries. Later, when coal was largely used as a fuel, lime was burnt sometimes out in the field on huge piles of wood, stone and fine coal, systematically distributed throughout, with a view for even distribution of heat; as the coal and wood burned and reduced the stone into lime. This method was known as lime stack burning. The building and capping of these lime stacks with clay to retain the heat to insure a "good burn," required great skill.

The great success attained by the use of lime gave a new impetus to the farming business. The example of so-called "gentlemen farmers," who gave special attention to soil improvement was soon followed when their experiments proved to be of real value. "Lime and manure!" became a farm slogan. Lancaster county farmers, with their large supplies of barn-yard manure, with the addition of lime, now had found a real panacea for imaginary or real farm ills. Large crops from their farms were now an assured fact. About 1800, red clover became general as a hay crop in this county. It is, therefore, quite evident that the use of lime was not brought about primarily to sweeten the soil to grow clover. That lime was good for the soil, was accepted on general principles, rather than to prepare the soil to grow clover successfully.

The first record that we have of lime being used as a fertilizer

in northern Lancaster county was that of Joseph Brubaker, Sr., and Frederick Keller, of near Lititz, in 1820. A period of prosperity seemed to come to the farmers about this time due to the growth of urban centers throughout the east. With the new demand for farm products, farmers began to throw away their prejudices and started to farming in earnest.

About 1840, guano, imported from South America, began to be seriously considered for special crops by progressive farmers near the cities. The demand for it became so great that by 1855 the price reached the "exorbitant price of \$54 per ton." Bone dust, and, later, ground and treated phosphate rock, became popular fertilizers. One of the interesting side-lights in the story of chemical fertilizers is, that their value was first recognized in England, and for a time bones were actually exported in quantity from Pennsylvania to be treated in England and used on the soil there.

About ten years after the Civil War, mixed fertilizer became a commodity of trade in Pennsylvania. Many were the tales told of exaggeration and misrepresentation in the early fertilizer trade. In time, however, regulatory measures were adopted by the State legislature to enable farmers to determine the monetary value of the fertilizers purchased by them.

Prior to, and for a considerable period after, the Civil War, wheat was the principal money crop of Lancaster county farms. During the early sixties, tobacco was beginning to be grown more or less extensively in some sections. This crop proved to be so profitable that its culture was rapidly increased and soon spread over most sections of the county. The new crop gave great impetus to the farming industry, land values increased, and prosperity reigned supreme, until recently, when, no one seems to know just how the agricultural industry stands. That this question will settle itself, however, as others have done at various times during the last two hundred years, there is little doubt.

In an old diary, of 1815, we find the following prices prevailing in Philadelphia: Dairy butter, 30c per pound; eggs, 20c a dozen; milk, 6c a quart; pork, 10c a pound; apples, 75c per bushel; onions, \$1.00 per bushel. The help problem was not troublesome. Male help was \$10.00 per month. A house-keeper at \$1.50 per week seemed about right. Groceries were a little high, however. Raisins

were 75c per pound. Tea could be had at \$1.34 per pound, and a pair of shoes cost \$8.00.

In our long agricultural annals, God's assurance to Noah that "seed time and harvest shall not fail" is one of the outstanding features of our two hundred years of farming in Lancaster county, as we have been almost immune from what may be regarded as serious agricultural disasters. There were, at long intervals, years of great droughts; the years of 1790 and 1825, being notable examples. According to tradition 1816 was a year with frost every month. Wheat was, however, an abundant crop. The following winter was mild; and the next spring flooded the land with warmth and moisture, as usual.

During the past year, 1930, we have experienced a severe drought, possibly the most severe in the memory of those now living. Yet, in the face of past history, our troubles, fancied or real, cannot be attributed to weather conditions alone. When we read about the advancements in our farm development during the first part of the 200 years, we should not overlook the noble service of thousands of courageous farm women, boys and girls, who toiled so faithfully with their spinning wheels, crude garden and farm tools, sickles, hand rakes, and even flails, in order to assist in properly clothing and feeding the family, while the men toiled with oxen, wooden plows, and harrows.

During the first hundred years of settlement, little progress was made in improving farm tools. The plows first used were made entirely of wood, the mould-board being a heavy block sometimes covered with a piece of iron. The beams on these plows were low, and easily choked with grass or manure, so that a boy had to walk beside the plow to keep it clear of rubbish. The lack of an implement that would stir the soil to a satisfactory depth for corn and other field crops, was a decided handicap, especially in the stony soils of some sections. This was an important factor that caused the rich and loamy soils of Lancaster county to be sought after. The better limestone soils in the fertile valleys of the Pequea and Conestoga became famous. After the heavy timber was cleared off, the soil was exceedingly loose and fertile. The rich loam, easily worked, produced enormous crops. It can be readily understood why the limestone farms commanded far higher

prices than the shale or sandstone, commonly called "The Red Hills."

As prosperity came to the agricultural industry, and as farm tools slowly improved, the so-called poorer farm lands were cleared and put under the plow. Wheat became the determining factor of land values and remained so for more than the first hundred years.

It was not until about the year 1800 that the first cast-iron mould-board plow was patented. This plow was made, strange as it may seem, not in Lancaster county, the already famous farming section, but in Bucks county, by Joseph Smith and his brother Robert. One reason for this is perhaps the fact that the early development of the iron industry in America was in that section. Pottstown had its iron works constructed in 1718. According to records, very little attention was given to the manufacture of agricultural implements at that time. By 1793, Coatesville had a steel rolling mill. Soon, however, the boom of iron manufacturing began; hundreds of expert blacksmiths, wheelwrights and iron workers were developed. Wagons were in great demand. The period from 1750 to 1830, might be termed the wagon age.

It was not until 1810 to 1830, that many of these iron experts turned their attention to farm machinery. There were reasons for this. The fact that canals had replaced many long-distance hauls lessened the demand for wagons. A new field of endeavor was being sought. The plow received first attention. Although historical English records claim that the first cast-iron mould-board plow, having a wrought iron share, was made in Scotland, in 1785, it is reported that William Ashmead, of Germantown, Pa., had previously made plows with a wrought iron mould-board. It is said that General Lafayette purchased four of these plows for his estate. Soon after 1810, the Smith plow factory in Bucks county was taxed beyond its capacity, for an agreement was entered into with a Philadelphia firm for making cast-iron mould-boards at the rate of 1,200 annually. At first many farmers were unwilling to adopt the cast-iron plow because it was reported that cast-iron plows poisoned the soil. This report was short lived, as subsequent events proved. For a long time, however, there was no uniformity in plows. A writer in passing through the country from Maine to Georgia noted "that you could hardly find one form

of plow to prevail for more than one day's travel. Almost every community had some form peculiar to itself and frequently of the most absurd construction."

It was not until about the year 1831, that real progress in the manufacturing of agricultural implements began. The shops and mills of the seaboard states, stimulated by the tariff of 1828 and by the spirit of the times, were bustling with activity. Foresighted men began to visualize the possibilities of agriculture. It is well to remember that there were only some thirty miles of railroad tracks in operation at the beginning of 1831; but the drive of enterprise was on. Everywhere men were catching up new ideas, new methods. The 85 per cent of the people then living on the farms of this country were about to exert their influence in securing some of the progress going on about them. There were those who were bold enough to declare that the farmer should have some cheap and serviceable labor-saving machinery, especially to perform the threshing operation, which, in the ordinary process of treading with horses or cattle, or beating with hand-flails, was tedious and slow. The threshing machine had come, though as yet clumsy and depending on tread power or power sweeps operated by horses or oxen. On a day in July, 1831, in Rockbridge, Virginia, the first McCormick reaper demonstrated its success by harvesting ten acres of wheat a day, instead of two, by former methods. It was Cyrus McCormick, then 22 years of age, who started the revolution in farming by machinery. By 1845, the "McCormick Virginia Reaper" had become an established fact. Prominent farmers gave their experience in using it in the then existing farm paper. One enthusiast reported that the reaper would do the work of ten men with cradles. In 1832, William Kirkpatrick, of Lancaster county, developed a portable threshing machine. It was horse driven and successful. It proved a great innovation, doing in a few days what once required weeks and weeks to do. It is said that conscientious farmers declined to use threshing machines as they deprived men of work.

The mowing machine, patented in 1832, by Jeremiah Barly, of Chester county, is recorded. Later, this machine was greatly simplified in the gearing, and in the hands of careful farmers was said to be tolerably successful. The Pennock brothers of Kennett Square,

Chester county, manufactured, in addition to mowers and hay rakes, grain drills. These drills gained wide distribution, and completely revolutionized the seeding of wheat, which heretofore had always been seeded by hand. A patent was issued to them in 1841, by the government. This drill was very complicated and consequently expensive. A farmer owning one usually did considerable wheat drilling for his neighbors during the season.

The museum of the Bucks County Historical Society is replete with old-time farm implements. The early type of plow used in Pennsylvania is especially interesting.

It is well to remember that up to this time, and a considerable period afterward, there were no organized agricultural facilities, as at the present time. There were no agricultural experiment stations, no farm agents or farm organizations, except, perhaps, a few of the very select that were far above the rank and file of the common, every-day farmer. American farming was making steady and substantial advances through the native ingenuity and intelligence of practical farmers.

In New York State, at Geneva, a farmer, John Johnson, by name, conceived the idea of tile-draining wet soils. The swampy condition of many of the soils about that section of the country was a menace to good farming on otherwise good land during wet seasons. In March, 1849, a complete account of his work with this form of drainage was given in the local agricultural paper. Somehow this form of reclaiming wet soils found its way into Lancaster county, for we find some artificially-drained lands in this county at a comparatively early date.

It is worthy of note that for some time during and after the Civil War, quite an impetus was given to the manufacturing of farm implements in our own county. The Root Plow Works, at Mt. Joy, and the Marsh Reaper Works, at the same place, were notable examples. The Keeler grain drill, manufactured at Lancaster, was at one time extremely popular, being less complicated, cheaper, and in every way superior to those first introduced. Fanning mills, to clean and separate the wheat from the chaff as it came from the machine, equipped with a "shaker," which separated the straw, but not the chaff from the wheat, were also manufactured at Lancaster. These fanning mills were operated by turning

a crank, by hand, while the wheat and chaff were being fed into the maw on the top of the machine by means of a six-tined wooden fork, by another operator. Cleaning one hundred bushels of wheat, by two men, who took turns in turning the handle of the mill, was considered a fair day's work.

There were also threshing machines and "horse power" works, at Lancaster; a reaper works, at Brunnerville; and another threshing machine works at Mechanicsburg, in this county. There were also numerous small shops scattered through different sections of the county, where spike harrows, shovel harrows as they were called, one-horse cultivators with wooden frames and iron teeth or shovels, were made. Then there were, at a later date, one-horse corn planters that dropped the corn and covered it in one operation; this was a great labor saver.

One-horse iron cultivators were made by local blacksmiths at several points throughout the county. Then there was the "Hoka plow," also of local manufacture. No farm equipment was complete without this implement. It had various uses: hilling up potatoes and digging them, and it was even used to "finish up" corn when weeds were unusually plentiful, or when they got "beyond control," figuratively speaking, in the corn field. Then there was an implement known as a "scorer," for marking out rows for potato and corn planting; also an implement known as a "scraper," made entirely of wood except the horizontal sweeps, which were made of iron about six inches wide with sharp edges at the bottom to draw the earth, forming a ridge on the row. This implement was drawn by two horses. By straddling the row with one horse on either side, excellent work was done when corn or potato plants attained sufficient height to prevent them from being covered up. This implement, being largely constructed of wood, was mostly turned out by the wagon-makers and blacksmiths combined.

These mechanics prided themselves on their work. It was not unusual for a first-class blacksmith and wagon-maker to combine and make a limited number of these implements and home-made farm wagons on orders from the local farmers in their district. Nothing but the best seasoned white oak and hickory wood material went into the construction of these wares, as there are to

this day some of these farm wagons and implements of local manufacture found on farms and still giving good service.

There came a time when these local merchants found their trade waning. The reason soon manifested itself. As the farming regions of other sections were developed, the demand for labor-saving machinery was greatly stimulated, as, for instance, the self-binder steam threshing outfits that threshed, cleaned, and bagged the grain many times faster than the old outfits. Farm machinery was flooding the markets and sold at prices with which local manufacturers could not compete. All kinds of tools and appliances, including wagons and harness, were being manufactured in great establishments near the centers of raw material, and other natural advantages were enjoyed. This was what we, in our day, call mass production. As a natural sequence, many local manufacturing establishments were soon forced out of business. Others lingered awhile longer, sometimes continuing the manufacturing of small hand corn shellers, and other small tools, but gradually they, too, gave up until at the present time very few farm implements of any sort are manufactured in our own county.

Great and wonderful are the changes which time has wrought! To have seen crude, cumbersome, implements laid aside for the almost perfect machinery of to-day, combined with the use of electricity, is a marvelous experience. Farm journals were not very important in the early history of this county, but there were some more or less valuable hints for agriculturists in even the most conservative literary publications of the day. Farmers in general, believing in a just God, diligently persevered against adverse circumstances.

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