

Food can be appropriated by plant roots only when it is in solution or in a condition capable of being dissolved by contact by the acid sap of the tiny rootlets. Matter which is in neither of these conditions is useless to the plant, though it may afterwards become available by various chemical actions within the soil. Most of the ingredients of soil are in an insoluble condition. This fact, while it makes that \$1,282.50 look like 30 cents on the dollar, is really of the utmost advantage, as else soils would lose their fertility by heavy rain.

We learn from this lesson the tremendous value of virgin soils; the fact that lime is not a fertilizer, but a "digester"; that it is of the utmost importance to conserve the natural fertility of our soils; that humus (either from stable manure or green crops turned under) not only furnishes much good food in it but also helps to digest and render available the inert plant food; that soil in good tilth gives up a larger proportion of its riches than where it is sour, sad, clayey or boggy; that the secret of successful farming is the judicious handling of the soil by rotation, tillage, leguminous crops, stable manure, etc., so that the barb-wire fence is broken down and the vast riches within now marked "non-negotiable" are rendered convertible into good wheat, King Corn, long staple cotton, or whatever speciality or diversity the farmer may choose. The spring is a good season for studying soils. The other good seasons are summer, autumn and winter.—H. A. Bereman, in Colmon's Rural World.

Live Stock at the Louisiana Purchase Exposition.

The Louisiana Exposition, in recognition of the magnitude and importance of the live stock industry, and appreciating that St. Louis, the seat of the World's Fair of 1904, is practically the geographical center of the largest improved stock-producing area on the globe, has appropriated a quarter-million dollars to prizes for which the world's stockmen are invited to compete.

This vast sum makes possible a classification much in advance of any heretofore attempted, with prizes on a scale of generosity before unknown in the history of expositions. The largest sum previously offered by a like enterprise was \$142,500 at the Columbian in Chicago in 1893.

In the classification every branch of improved animal industry is to have its proportionate recognition, whether it be the Percherons, Short-Horns, Pigeons or Pointers; whether the meek-eyed cows from the Channel Islands or descendants of the American bison that once made populous the plains beyond the Missouri; whether the petite ponies from the Shetland Isles or the robust mule that has in recent years so rapidly advanced in public esteem by his proven usefulness in war no less than in the prosaic paths of peace. For the accommodation of the array of exhibits which will compete for the prizes offered, the management have allotted thirty acres of the most desirable ground in all the Exposition tract of over twelve hundred acres.

BOOKKEEPING ON THE FARM.

There, As Everywhere Else, It Bears a Vital Relation to Success.

A great many times in my life I have been asked the question, "Can farming, as a business, be made to pay?" The question is a very old one and I suppose will continue for some time to be asked. My answer has always been the same: "Yes, but it must be remembered that farming, as a business, is subject to the same general principles which govern any other business."

If a man were to start a cotton mill and keep no account of receipts and disbursements, take no care of his machinery and keep no lookout on the market, how long could he continue in business, or what bank or individual would think for a moment of advancing him credit to carry on his enterprise? And yet the same necessity for exact business methods exists in agriculture as in manufacturing.

"But," says some one (and, in fact, I heard this same argument only a few days ago), "a cotton mill is a big affair and a farm a comparatively small one; and the exact methods of the one are not necessary in the conduct of the other." Unquestionably the farm is usually—though by no means necessarily—a smaller affair, but a business conducted without system must of necessity be small.

I have purposely used the cotton mill as an illustration because, though great fortunes have been built up by it, the making of cotton cloth is not, in itself, a very profitable industry. There is a larger percentage of profit on many agricultural operations, and the comparison of the two industries illustrates the old truism that a bad business well managed will pay where a good business poorly managed will not.

It is true that the number of business failures among farmers is extremely small as compared with other classes, a fact that many agricultural journals dwell upon with insistence. But why are these failures so infrequent? Simply because, with a very large proportion of farmers, agriculture is not a business at all, but only a means of subsistence, which is a very different thing. A man who has no business cannot fail in it. But though farmers may not often be driven into bankruptcy, they sustain losses from neglect of business methods which they little suspect.

An illustration of this, which I think is worth giving, recently came to my notice.

An acquaintance of mine had one hundred and two cows on his dairy farm. The farm was not paying, and he asked me if I could find where the trouble lay and point out a remedy. After a careful examination of his farm and equipment I told him I doubted if all of his cows were paying him a profit.

He was surprised and said that though the cows varied in quality they were all good cows. The test, however, which consisted in milking

each cow separately until her milking qualities were fully ascertained, disclosed the fact that eleven out of the one hundred and two were being kept at a loss, while several others were barely self-supporting!

The weeding out of these worthless animals made it possible to dispense with the services of one of the farm hands, and a further test proved that the cows would give just as much milk and keep in better health on a considerably less expensive ration—a thing their owner should have known long before.

The advantage to the farmer of knowing just "where he is at" in each and every department that he has in hand would seem to be so self-evident as to be beyond the realm of discussion. "But I don't need to keep books," said a country neighbor of mine; "I have a good livin' and I'm sure o' that much; then if I have say, \$500 to the good at the end o' the year, I don't need any book but my bank book to show me I've got it—and there's my profit, see?"

No, I didn't see, and I asked him at what figure he estimated the cost of his living. He had very vague ideas on this subject and was surprised when I told him that he ought to know, and that the figure should be added to his \$500. I said I supposed he at least knew what he paid out during the year for groceries, flour and household supplies. But no, he didn't know even that. Further talk disclosed the fact that he never disbursed any cash for these luxuries, but "cal'lated" for his hens to pay the store bill, always trading eggs for groceries.

"Then you don't know how much to credit your hens with?" No, he didn't. But the critters done all he required of 'em; they paid the store bill.

My averment that an accurate knowledge of one's business was essential to obtaining the best results of which it was capable he admitted did sound kinder rash'nal; but he cal'lated to hit pretty nigh the mark without much cipherin', and concluded as follows: "We farmers hev got a vein o' luxuriousness in us that ain't always evident in our exteriors, and we're willin' to lose a few thousands o' dollars in a lifetime for the sake o' freedom from harrassin' details—a sort o' livin' up to our ideals, as our parson says." The unquestioned philosophy of this reply excited my admiration, but I doubted its truth. I felt sure that he would not pay the price, nor anything like it, for that particular kind of freedom if he realized it in its full extent.

This man was by no means a fool; on the contrary he had much native sagacity, and many sterling qualities, but his training from boyhood up had all been in the lines which he followed, and having attained a moderate success he placed the stamp of full approval upon himself and his manner of farming. He was doubtless honest in his judgment, but his success was not in a large enough way nor of a sufficiently attractive kind to justify it.

WHAT SYSTEM WILL DO.

But perhaps of greater value as an illustration than any other instance I could cite is that of a man in my native State of Rhode Island. He inherited from his father a very good farm, beautifully situated and of fertile soil, though rather far from market. For some reason or reasons it paid him very little and he became greatly dissatisfied. He finally decided to keep for one year a separate account of each feature of his farm in order to ascertain which was the most and which the least profitable. This brought to light some surprising facts. He found that he had been fattening steers at a loss, and that his dairy was barely self-sustaining. His sheep paid much better, but the one feature which paid far in excess of any other was his poultry. On this there was a net profit of a trifle over a dollar a head per annum.

He now gradually disposed of his cattle, keeping more sheep, and increasing his poultry (which he kept on the "colony plan") till he had over seven thousand hens. Figured on the above basis, which is a safe one, the income from these alone is no mean figure, to say nothing of what he realizes from his sheep and other sources. I have personally examined (and admired) his farm a great many times and know that it is an exceedingly profitable one. And yet this is the same farm which formerly yielded only a meagre and unsatisfactory income.

I might cite other examples, but the above are probably sufficient. They cover very diverse conditions of soil and climate, and, I think, contain in pretty full measure the answer to our question.

The question may very naturally follow, "If agriculture can be made to pay so well as a business why not have not more men gone into it as such?" The answer is simple. Young farmers have rarely been trained in exact business methods, and habit holds them to their manner of life; while young men in the cities lack that intimate knowledge of agriculture without which all the method and system in the world would never make the farm pay. The number has thus been restricted of those who would naturally grasp the possibilities of agriculture, and to whom it would appeal as a thing in which brains and capital could be profitably invested.

Nevertheless, I believe that in the future—possibly much sooner than any of us expect—greatly increased attention will be bestowed upon agriculture as a business. Its possibilities, as brought to light by investigation and the gradual narrowing of many other fields, will naturally compel this. It is a field that has never been overdone and it contains golden prizes for those who will cultivate it aright; even in those departments which have been most largely developed and in which there has been the greatest competition there is still room for the production of the best. Of the best agricultural products there has never been, and never will be, an oversupply.—David Buffum, in Saturday Evening Post.