

agricultural world is no exception. The only difference is that the agricultural world advances a little more slowly.

It is well, therefore, to give heed to new methods, even though we may not see fit to adopt them, otherwise we may be left behind. It may be wise to allow the experiment station first to experiment with new grains, but when this has been done, and they have been found to possess superior qualities, then it is not wise to refuse to grow them: without having tried them. The man who swings the old scythe to-day in a meadow that can be conveniently cut with a field mower will soon have to go out of the business of raising hay. And, likewise, the man who buys every kind of implement that comes along is soon likely to go out of farming for want of means to carry it on. While conservatism, therefore, is a good thing in farming, let it be tempered with progress.

Can Soil Fertility be Maintained ?

It can. But can soil fertility be maintained and the farm at the same time furnish a profit to him who tills it? The answer to this question will depend very largely upon conditions such as the amount of fertility in the soil, the location of the farm, the markets, and the farmer. We can imagine a farm so devoid of fertility as not to repay him who tills it, though it be favorably situated, and tilled ever so wisely. We can imagine farms of choice composition as to soil ingredients, and yet so awkwardly situated that it is scarcely worth while to try to farm them on any lines. We may readily imagine land well adapted to a certain line of culture, and yet it will not pay to do anything with it for a term of years other than to take out of it all we can get, and then abandon it, at least for a term of years. And we can easily imagine instances where everything is favorable, and yet the farmers do not succeed in maintaining soil fertility from sheer want of knowing how. And they may, at the same time, be honestly striving to till the soil so as to give it fair play.

Undoubtedly, soil fertility can be maintained, and without the purchasing of foods or commercial fertilizers. It has been done repeatedly, but it can only be done through the keeping of live stock. And when we say it can be done without the purchase of any foods, we would not have this idea pressed too far, as in nearly all instances where farming is suc-

cessfully conducted some foods are sold and some are purchased.

Fertility may be increased by keeping live stock and growing for them suitable kinds of food. Suitable kinds of food will include legumes, for, happily, legumes are among the most valuable foods for stock that we can grow. And, in addition to furnishing food for stock, they bring nitrogen to our soils, and nitrogen is the most costly and usually the most needed element of plant food. They bring it from the air, and some of them also from the subsoil.

Let us see how they do this. Take clover, for instance. Clover strikes its roots down into the soil and subsoil. In the subsoil it finds some nitrogen, some phosphoric acid, some potash, and other things. These are used in promoting growth. A part of these substances goes up into the portion of the root where the next crop sown upon the soil will find them and feed upon them, and a part goes up into the portion above ground where live stock can utilize them, and in such a way that the greater portion can be put back again upon the soil in the manure. And the clover, while it grows, draws nitrogen from the atmosphere, and puts it into the soil eventually. There is, therefore, a residuum of nitrogen put into the soil by the clover, and this will constantly increase if clover is grown quite frequently and fed upon the farm, along with all the other crops that are grown.

But the phosphoric acid and the potash are not obtained from the air. How shall a supply of these be maintained? In the first place, there is usually a goodly quantity in the soil. In the second place, that which is in the soil in inert forms is continually becoming liberated. This, of course, so far lessens the supply in the soil. But to replace that some is brought up from the subsoil, and when the food which it produces is fed it goes back to the surface soil to make up for the partial loss in the bones of live stock that may be sold. It would be legitimate, of course, to buy an equal amount of bone meal, etc., to supply this waste, but we can conceive it possible to keep the amounts of these in equilibrium without doing this. Phosphoric acid and potash do not waste in the soil as nitrogen does, more especially potash.

The legumes that we can grow in this happy country are various. They include clover, lucerne, peas, vetches, and beans, and the aim should be to grow these to the greatest possible extent.