world so far as we know it, clearly show that a fertile soil is one which has accumulated within itself the residue of ages of previous vegetation, and that it becomes infertile as this residue is exhausted.

IMPROVEMENT IN BUTTER

By W H. Lynch.

It is generally admitted that the largest proportion of poor butter is made in our private dairies. The creamery has certain advantages over the dairy, as it is. The creamery produces uniformity in quality, and by the production of quantity, helps to the solution of the marketing problem. It has been claimed, therefore, that the creamery will eventually bring about the desired improvement. Could this be reasonably expected it would be a matter for congratulation; but the conviction is gaining ground that the conditions of butter-making are not favourable enough to make the creamery become in this industry what we desire to see it, and what the success of the factory in cheese-making has led some to expect. Says Prof. Arnold:

"I foresee the time when the best as well as the greatest quantity of butter will be made in the private dairies."

T D. Curtis just writing up a trip through Missouri, writes:

"I am told that some fifty creameries have been started in the State - all small and many doomed to failure."

The writer may quote himself, from his evidence before the House of Commons Committee, from the Report of which Prof. Arnold's opinion was taken:

"The expectation that the private dairy will give way to the factory is based upon the supposed fact that it has done so in cheese-making. It is a striking commentary on such a claim, that after twenty years of co-operative dairying in the United States, there is yet more than twice as much cheese made in the home dairies as there is butter made in the factories proper, and within 2,000,000 pounds of as much cheese made in the home dairies as there is butter made in the factories altogether — in creameries and skim cheese factories. Again, 74 per cent of all the dairy products of the United States consists of butter made in the private dairy; while the butter, so far made in factories, altogether is less than 3 per cent. of the whole dairy product. The cheese made in factories is, as yet, only 20 per cent of the whole dairy product. The state of things in Canada cannot be materially different."

This would at least go to show that any improvement, at all events any radical and early improvement, must be brought about in our private dairies. This is where the bulk of butter is made, and for all the proof that has yet been given to the contrary, will be made.

There have been three agencies at work effecting improvement in dairying. They are co-operation, education and improved utensils. Which has done the most it is hardly necessary to claim. Co operation could not have done so much as it has done in cheese making, had it not been for improved machinery; and co-operation might do more for butter-making if it could have a larger aid from improved implements. Education has done a great deal for butter making, and it will do more if it has further aid from improved mechanical appliances. The general use of the thermometer alone would make a marked difference in the average quality of the whole product. The necessity for the skill and judgment that comes only from long practice, would be largely eliminated by the use of this simple and cheap instrument.

Co-operation will do a great deal towards meeting the want where the conditions are favorable as they usually are in cheese-making, and sometimes are in butter making.

Education will do much both towards helping to the introduction of improved appliances, and making the use of them effective.

To the natural question what will set these agencies to work, there can be but one answer. Government and private enterprise. The work of the former will be mainly educational, the work of the latter will be mainly the establishment of co-operative dairying and the introduction of needed appliances.

CUT HAY EARLIER.

The best writers for the agricultural press have for many years urged farmers to cut their hay a little earlier than has been the prevailing practice, and, so far as we can judge, the farmers generally are ready to admit that the hay crop is not cut quite as early as it should be to give the best quality of fodder for cattle. The difficulty seems to be that farmers do not get ready to begin haying as soon as they ought. There is a little more planting to do, or a little more hoeing, or the machines are not in order, or the extra hired help do not arrive.

Some do not like to begin till all other work is finished, so that there shall be no interruption when the mowers are started. It is possible that the farm may be mowed over and the hay secured at less cost where other work is not allowed to interfere after haying is begun, but the quality of the crop is likely to be far inferior to what it would be if each lot were cut at the time it was in its best condition.

The introduction of haying machinery has enabled the farmer to cut his hay in much less time than it formerly took, and consequently our hay crop is secured in much better condition than formerly, but we think that farmers, as a rule, are quite too backward about beginning the hay harvest. We would never consider the hoeing all done for the season so long as there were any weeds that ought to be killed, or ground that needs stirring, nor should the planting season be deemed ended so long as there are vacant spots in field or garden that ought to be devoted to some paying product. With our greater diversity of crops we find it often necessary to be planting or sowing seeds nearly all the growing season. —*Peterboro Times.*

CHEESE FOR FARM USE.

This process, says an exchange, is a simple one, and the needs for it are few. Every pound of cheese requires ten pounds of milk, and a ten pounds cheese is about as small a one as can be conveniently made. A clean tub which will hold the milk and a boiler large enough to hold ten gallons will be needed. A small press, which any smart boy can make, with a lever to hang a stone upon, will also be required, and then the "know how" is all the rest. Making cheese is a chemical operation, and depends greatly, like all other such work, upon temperature. One cannot be safe without a thermometer, — a rule of thumb will not be precise enough.

The first thing to do is to bring the milk to a temperature of 90 degrees. This makes a soft cheese; a higher temperature will make a hard one. The milk may be of two milkings—the evening milk, set in a deep pail in the cellar and stirred late at night and early in the morning, to keep the cream from separating, and the morning milk mixed with it as it is strained after milking. If any cream has risen on the evening's milk it may be skinned off. The evening's milk may be warmed to 100 degrees and then added to the fresh morning's milk, which will be about 80 degrees; the whole will then be about the right temperature, which is 90 degrees. The rennet is then added. This is the liquid