

order to carry on and perfect their growth. A soil deficient in this mineral can never be a very productive one until the deficiency is made good.

The additional crop raised by its use is very striking; for example, I have been told that Mr. D. L. Simmons, of Colborne, applied lime on a portion of a field of wheat and harvested it last year. He kept the grain separate, and the portion that was unlimed yielded 26 bushels to the acre and the part limed 45 bushels, a difference of 19 bushels per acre.

I should have said that both portions of the field received the same cultivation, only in the one case there was the addition of lime. Mr. Simmons was so well satisfied with the result that he used 400 bushels this season. I noticed an article on liming pasture lands in this week's issue of your paper, and I am pleased to see this important question is being brought to the attention of your readers. If farmers would try lime on a portion of their summer fallow this fall, even on a small scale, the result would prove satisfactory. A very much larger yield and an improvement in the quality of the grain is almost certain to follow its use besides hastening the harvest. This can be done at an average expenditure of not more than \$1 per acre per annum.

Yours, etc.,

Milton, Ont., July 20th, 1899.

G. F.

Locusts in Manitoba

To the Editor of FARMING:

My attention has been called to the fact that a small district in the south-western part of Manitoba has been visited by locusts.

I understand a report has been made by scientific men to the Department of Agriculture of the Province of Manitoba respecting the same.

I have examined the Manitoba papers very carefully to ascertain what action is being taken by the Government to destroy the eggs of the locusts, but hitherto have failed to notice any definite action being taken.

You are well aware of the evil results to Manitoba and the whole Northwest if the locusts are allowed to increase and spread over the country. I trust, therefore, that you will draw attention in your widely circulated journal to the necessity of prompt and effective measures being taken to exterminate the locusts in the small area to which they are now confined.

Yours, etc.,

CANADIAN.

Toronto, July 20th, 1899.

Hydro-Lactic, Gravity or Dilution Cream Separators

To the Editor of FARMING:

During the past year and a half or so there has been placed upon the market in New York, Wisconsin, Michigan, Minnesota, Iowa and several of the other States, as well as in Ontario, several devices or so-called "separators" under various names, such as "Wheeler's Gravity Cream Separator," made by the Gravity Cream Separator Co., Mexico, N.Y.; "Hunt's Improved Ventilated Cream Separator," made by Hunt Manufacturing Co., Cato, N.Y.; "Aquatic Cream Separator," made by the Aquatic Cream Separator Co., Watertown, N.Y.; "Webber's Hydro Lactic Cream Separator," made by the Hydro-Lactic Cream Separator Co., Niagara Falls, Ont., and several others under various other names.

For some time the attention of the public had not been called to these "separators" through the agricultural or dairy press by advertisement or otherwise, they being introduced almost wholly by retail agents travelling through those sections where small herds of cows were kept and the deep-setting or shallow pan system of creaming was in use. But of late the manufacturers of these "separators" have be-

come more forward in introducing their goods, and now we very frequently see very attractive advertisements in the press.

The somewhat extravagant claims made for these separators are best shown by the quoting of a few from the circulars and directions sent out by the various manufacturers:

"Reasons why you should have a Webber Hydro-Lactic Cream Separator:

"It costs but little." "It needs no ice." "It gets all the cream in an hour." "The butter comes quicker." "It is of better quality." "There is more of it than by old methods," etc., etc.

The manufacturers of the other kinds give a large number of similar reasons why the farmer should use their separators.

These "machines" are simply tin cans fitted up with upper and lower side glasses, or a wooden tank lined with tin, with a faucet at the bottom through which the skim milk is drawn off. They all work on the same principle, which is the dilution of the milk with an equal amount of water, or if very rich milk more water is to be used. Thus so far as the efficiency of the work is concerned one should give just as good results as any of the others.

During the past few months we have had several samples of the skim milk from these "separators" sent to us to be tested by the Babcock test. In looking over the results of these tests I found that the per cent. of fat in the skim-milk varied from .8 to 1.4 of 1 per cent. We also had one of these "separators" on trial for some time, and after using it according to the instructions of the manufacturers for some time, making daily tests of the skim-milk, we found the average per cent. of butter fat in the skim-milk to be .85 of 1 per cent.

But upon further investigation of the matter I found that our results were very much the same as those found at the Ontario Agricultural College by Prof. Dean, those of the Cornell Exp. Station by Prof. Wing, and those of the Vermont Exp. Station by Prof. Hills.

At the Ontario Agricultural College the Hydro-Lactic Cream Separator was given thirteen trials, and the diluted milk was allowed to stand from six to twelve hours before skimming. The average per cent. of butter-fat found in the skim-milk was .6 of 1 per cent., while the average of five years' work done with the centrifugal separator, the deep-setting and the shallow pans was as follows:

No. of Tests.	Pounds of Milk Skimmed.	Method of Skimming.	Average per cent. Butter-fat in Skim Milk.
150	7,600	Separator	.10
150	7,600	Deep setting	.31
150	7,600	Shallow pan	.38

Thus we can readily see that Webber's Hydro-Lactic Cream Separator did not do nearly so good skimming as did either the deep-setting or shallow pan method of creaming. While it cannot begin to compete with the centrifugal separator, notwithstanding the fact that its manufacturers claim as follows: "It (Webber's Hydro-Lactic Cream Separator) obtains the same results at one-sixth the cost of high-priced centrifugal separators, and requires no outlay for repairs or operation."

At the Vermont Station Prof. Hills used the "Wheeler Gravity Separator," and obtained the following results:

Character of Milk.	Average Per Cent. Fat.	Dilution.	Number of Trials.	Per Cent. of Fat in Undiluted Skim-milk
Herd milk, mostly Jersey grades.....	5.00	$\frac{1}{2}$ milk, $\frac{1}{2}$ water	39	0.63
Herd milk, mostly Jersey grades.....	5.00	" "	3	1.05
Stripper (Jersey) milk.....	5.50	" "	28	0.78
" "	5.50	" "	27	1.13
Ayrshire milk.....	3.75	$\frac{1}{2}$ milk, $\frac{1}{2}$ water	23	1.50

In his report Prof. Hills writes: "These same milks were closely skimmed by the centrifugal separator, which, moreover, was able to extract some cream from the diluted skim-milk. The "gravity separator" left in the skim-milk 13 per cent. of the fat of the mixed milk, 17 per cent. of the fat of the stripper milk, and 40 per cent. of the fat of