to the subsoil so that the moisture necessary for germination can move up from below by capillary action. Always try to keep the soil moist and loose and plow before weeds can go to seed and summer-fallowing will give good results. To get best results from fallowing it is usually necessary to plow twice during the season and harrow the first plowing two or three times. Summer-fallowing is not to be recommended except in rare instances. One year's crop and considerable labor is lost and it is also very wasteful of plant food. It is wholly unnecessary to summer-fallow where rotation is practiced.

Success with Clover, Grass, and Alfalfa.

At the Terra Nova farm of S. Martin, where the Doddies of Sam Martin luxuriate in grass and winter on fodder corn, efforts are being made to vary the diet by means of legumes. Martin's alfalfa and red clover look well and were each sown at the rate of 12 pounds per acre mixed with grain. Growth enough was obtained to make two cuttings a year, the first being as early as June 18th, one ton at a cutting being obtained. Alfalfa, as far as Mr. Martin's observations go, does not spread, wherein he likes it better than brome grass. A plot of English rye grass, introduced by Kenneth McIver of Virden was seen. Mr. Martin likes it and states that it is ready early and late. He believes that in Western Manitoba and on similar land better catches will be had by sowing the grasses and clovers mixed with the seed grain in the drill, thus getting the small seeds down to the moisture.

At the English farm at Harding alfalfa and red clover stands were also seen that had been down two years. In each case the seeds had been sown alone on a piece of summer-fallow, May 27th, 1905, and off two acres six loads were taken at the first cutting, August 6th, 1905; a good crop was also taken off August 1st, 1906. A portion of the seed was treated with nitro-culture and although Mr. English states there was no apparent difference other years, this spring the treated portion is much the stronger in color and foliage. The alfalfa (lucerne) appears to do the better, although the red clover was also quite strong. Twelve pounds of seed were the quantities sown by hand on a piece of rather exposed land. Another grass which has met with much favor at Mr. Martin's hand, is corn, which is preferred to roots, it being less bother to handle. He stooks in big stooks, and thinks a lot might be cut and mixed with the straw just before the snow gets deep. Everything eats the corn, over one hundred loads of the fodder being fed last winter. The corn planter is used, this season the intention being to try check-rowing, so that cultivation may de done each way. In Mr. Martin's opinion alfalfa improves with each year and he is quite enthusiastic about it as a plant for Westerners.

Alfalfa Supreme as a Forage Crop.

The Old Country farmers are noted for their attention to green food for stock, so that their testimony re alfalfa is worthy of consideration.

Alfalfa or lucerne is already extensively grown and very popular in some parts of the country, but there are still some unenlightened districts where it is never seen. As a forage crop it has no equal. A small patch of four or five acres of lucerne will throw up an enormous amount of greenstuff. It comes very early, and it should appeal very strongly to exhibitors of stock at the early shows, who are often at their wits' end for something to cut green at this time of year. It is very useful to give to the working horses on the farm, and by cutting a good load every day and putting down for them on the grass when they are turned out at night, not only enables them to have a good fill without having to walk the fields after it, but is also a great saving in grass. It is excellent feed for sheep, both young and old, and is most valuable as a forage crop for dairy cows. It will both increase the yield and the quality of the milk, and as it will stand drought better than anything else of the kind, is most valuable in a dry time, when any green succulent food is almost unobtainable. Its quick growth enables it to be cut several times in a season, and any that gets too old is easily converted into fodder. It is best sown on a piece of land near the farmstead, so that it does not require much time or labor to fetch it when wanted. When it has exhausted itself, which, however, will not occur for a period of seven or eight years, it must be broken up and the roots being an excellent manure when ploughed in, heavy crops of wheat can be grown after it. It is well to manure it every year so as to keep up the strength of the land. The above crops shoud be more extensively grown, and on farms where there is a short acreage of pasture land or where the land has become stale from overstocking it will be found a great boon, inasmuch as a greater head of stock can be kept with its aid, and it is a more profitable way of dealing with a piece of poor, unkind land.

In the West, corn is a strong rival but is not the equal of alfalfa in renovating the soil.

Plowing Match Dates Changed.

Owing to a misfortune the dates for the Blyth and Carroll plowing matches had both been fixed for the 27th of June; but arrangements have been made between the match committees to change the dates for both matches. Blyth to be held on Wednesday, June 26th and Carroll on Friday, June 28th.

WM. J. ELDER.

Farmer's Excursion to Experimental Farm.

The excursions that have been run to the Experimental Farm at Indian Head during the past have been much appreciated and well patronized so that the Department of Agriculture has decided to continue them this year. On July 9th, special excursion trains will leave from Fleming on the main line C. P.R., Antler on the Arcola line and Prince Albert on the C. N. R. The following day, July 10th, trains will leave from Gainsboro via Soo line, Caron on main line, of C. P. R., and probably Balcarres on the Kirkella line, all having the Indian Head Experimental Farm as their destination. Arrangements are under way whereby excursion rates may be secured on the main line of the C. N. R. to Warman, so that while no special train will be run on this line, excursion rates may be secured to Warman and the excursion train used to Indian Head.

The crops at the Experimental Farm, while somewhat late on account of the backward spring, are fast approaching the growth of a year ago and by the time billed for the excursion should be in a flourishing condition.

* * *

At the Wisconsin station it was found that an acre of rape when grazed off by pigs gave returns which indicated a food value equal to 2,600 pounds of grain. The seed is inexpensive and the crop one of the easiest to raise. Sow two or three pounds in drills, or four or five pounds broadcast, on good rich soil. Seed any time from early spring until July, this depending upon season and locality.

DAIRY

Dairymaids or Those who Would Be, N.B.

The Manitoba Agricultural College has arranged for a special train for the purpose of giving demonstrations in butter-making, milk-testing, the operation of cream separators, etc., at a number of points located in the districts specially adapted for dairying. This train, which will be known as "The Dairy Special," will have one car fitted with cream separators, churns, butter-workers and Babcock milk testers. There will also be seating capacity for a large number. The staff of lecturers and instructors will include Principal Black, of the Agricultural College; Prof. Carson, chief of the dairy department; Prof. Rutherford, A. R. Greig, B.A., Sc.; L. A. Gibson, inspector of creameries, and N. J. Kuneman, inspector of cheese factories for Manitoba. In addition to the demonstrations above mentioned, lectures will be given on such subjects as the "Best methods of caring for and handling milk and cream," "The management of dairy herds," "The best type of cow for dairying," "How to increase the profits of the dairy," "Methods of butter making," "Management of cream separators."

Farmers and dairymen are requested to bring to the train samples of whole or skim milk which they would be interested in having tested. This work will be done free of charge to everyone and report given if possible at the close of the meeting. It is believed that the attendance at these meetings will be large. The ladies are very specially invited.

The following is a list of the points at which the train will stop, and the time during which the meetings will be held:

June 24.—Ely, from 9 a. m. to 11 a. m.; Gladstone, from 1.30 p. m. to 3.30 p. m.; Plumas, from 4.15 p. m. to 6.15 p. m.; Glencairn, from 7.15 p. m. to 9. 15 p. m.

June 25.—Neepawa, from 9 a. m. to 11 a. m.; Makinak, from 2 p. m. to 4 p. m.; Dauphin, from 5 p. m. to 7 p. m.; Sifton, from 8 p. m. to 10 p. m.

June 26.—Swan River, from 9 a. m. to 11 a. m.

June 27.—Woodlands, from 9 a. m. to 11 a. m.; Lake Francis, 11.30 a. m. to 1.30 p. m.; St. Laurent, 2.14 p. m. to 4.14 p. m.; Oak Point, 4.40 p. m. to 6.40 p. m.

Why Not Swap Skimming Forces?

EDITOR FARMER'S ADVOCATE:

Why not Swap Skimming Forces?
And have an easier time.
And more dollars for the work you do.

You can come near to doubling your dairy profits—perhaps even more than double them—simply by swapping the force of gra vity for centrifugal force in the skimming of your milk.

Suppose we get right down to rock bottom regarding this skimming business.

Cream and skim-milk don't separate just to accommodate anybody, but because some force compels them to.

There are just two forces known to man that can be used for the profitable skimming of milk. One is the force of gravity—the old time crock, pan or can setting system in use ever since man learned how to milk. Let us take a look at gravity systems first and the other and stronger force afterward.

Gravity is the force that pulls every object downward—the force that gives all things weight. The force of gravity does not change. A pound is the pound the year round. When milk is set in pans, crocks or cans, the force of gravity pulls down on every particle of skim-milk or cream the crock, pan or can contains. But this force of gravity pulls harder on the skim-milk particles than on the butter-fat particles, so that we say skim-milk is heavier than cream, bulk for bulk. In consequence of this difference in weight, or pull of gravity, the skim-milk settles down and the cream is squeezed up. But not all the cream is squeezed to the top. Some of it fails to rise. There is a reason for this.

When milk is set away in pans, crocks or cans it begins at once to grow stale. One of the constituent parts of milk is the casein or cheese part. The instant milk begins to grow stale, this casein or cheese part begins to coagulate or thicken. It first forms a sort of invisible net or web all through the milk and this web grows gradually thicker and thicker until it forms the solid curd or clabber of sour milk. This web cannot easily be detected until it has become very thick, but it is there, even though we do not see it. As this web forms it entangles and holds fast many of the butter-fat glubules. The force that skims the milk must be strong enough to pull the entangled fat globules out of this cheesy net or a considerable portion of the butter-fat will be left in the skimmed milk and be lost.

It doesn't take a man with much imagination to comprehend that the results he'll get in the skimming will consequently depend very largely on the strength of the force he uses to do the skimming. Realizing this, it is not likely that a man will turn up his nose at a strong force and keep on using a weak one; to do so would be to hug failure and shove success out in the cold.

But how strong is gravity? Is it strong enough to be used successfully as a skimming force, or does its use result in direct, positive, twice a day loss of cream in skimmed milk to every farmer and dairyman who uses it? These questions are wedged right under your bank account. Since the success or failure of your dairy depends upon yourself, hadn't you better give these questions some pretty careful thought?

Gravity is weak. Being weak, its effect is slow. Being slow, it allows the casein net to form. Gravity is not strong enough to prevent this casein net from entangling and holding down part of the cream.

Because it is weak and slow, gravity must be allowed, say, twenty-four hours to skim a batch of milk. And all that time the milk and cream are standing round taking up odors from the air, growing stale or sour and the fat entangling casein web is getting in its work to your loss. The result is bad in every way. The loss of cream frequently amounts to from one-third to one-half; the other third or half left in the skimmed milk goes to make six-cent pork or veal instead of twenty-five to thirty-five cent butter. The cream that is secured will be off flavor, the butter will show the effect, and stale or sour skimmed milk is not the best sort for your young stock, even though such milk be warmed before feeding. In this way gravity causes the dairyman a great falling off in quantity and quality of butter and in the value of the skimmed milk. This figures up a heavy cash loss in a year.

Gravity is a hard task master. It entails much needless work upon dairymen. When gravity systems of skimming are used, there are all the pans, crocks or cans to be filled, set away twice daily; later, they must all be brought out, skimmed, emptied and washed; also, the cold skimmed milk must be warmed before feeding if the farmer desires to avoid bad results in his calves. All this takes time and strength —both of which should count as part of the expense of operating the dairy.

These are some of the many reasons why the use of gravity systems of skimming are unprofitable and unsatisfactory. Is it any wonder that the dairyman who uses a gravity system fails to make dairying pay? But how about this other and newer skimming force—this centrifugal force? How does it work? How strong is it? What does it accomplish that gravity fails to do?