

more extensively than it is in this country. We believe no other forage crop produces an equal quantity of highly nutritious food, and food which is relished by all classes of live stock whether in a green state or as hay.

In France and some other European countries, in Argentina, in the United States, and in Australia, lucerne is extensively grown, its acreage in the three countries last named having increased rapidly in recent years. As compared with nearly two million acres grown in France, only 24,219 acres are under lucerne in Great Britain. This is nearly double the area of ten years ago; but it is still a ridiculously small acreage for one of the most valuable of all forage crops. There may be something in the climate of Scotland to account for the growth of only 37 acres in that division of Great Britain; but, even if lucerne were grown only on soils unquestionably suited to it in England, its acreage might well be ten or twenty times as much as it is, especially now that temporary pasture is in favour.

We have never been able to account for the neglect of lucerne in this country except from one cause—namely, the persistence with which those who write upon it recommend an almost prohibitive method of cultivation. Growers have been instructed to drill the seed, and to hoe the crop two or more times in each season, at least for several years after sowing it. This method of treatment makes lucerne the most expensive of all crops of the pasture kinds, instead of being—considering its prolonged existence—about the cheapest. Of course, this expensive method of cultivation is not adopted in the countries where lucerne is grown on a large scale. As Mr. GIBSON says, in his article on the cultivation of the crop in Argentina, some of the finer grasses come up under the shelter of the lucerne, but this is not regarded as a disadvantage. On the contrary, a little variety in the herbage is regarded as beneficial to stock. Rather than have to hoe the crop, some grasses should be sown with the lucerne to cover the ground quickly and keep weeds from growing. In Guernsey and Alderney splendid crops of lucerne and perennial ryegrass may be seen growing, and in some cases these temporary pastures contain also a mixture of clovers and various grasses. Any plan is better than the hoeing system, because cheaper. Mr. C. S. READ is quoted by Dr. FREEMAN in support of this view of the case. Speaking at the Farmer's Club in February, 1895, Mr. READ said:—"My idea is that, instead of growing it in rows and going to the bother and expense of attempting to hoe it (which is an exceedingly difficult operation), you had better sow it as thick as you can, and then harrow it. Harrow it after the first year, and you will get rid of the small grasses and weeds with which it is encumbered at very much less cost and as well as if you hoed it."

In Argentina, Mr. GIBSON says, it is usual to sow 13 lbs. to 15 lbs. of seed per acre. In some cases a good plant has been obtained with half the lower of these quantities; but the climate and soil of most parts of Argentina are particularly well suited to lucerne, and even there it is considered good policy to sow 13 lbs. to 15 lbs. In this country, if sown alone, 20 lbs. of seed per acre would be better, for the sake of covering the land quickly; but much less would do with grass seeds. The high appreciation of the crop in Argentina is shown by the

plan described by Mr. GIBSON as commonly adopted by the owners of large estates in order to get land laid down with it. They let portions of their land to Italian colonists for five or six years, taking a small portion of the produce as rent, on condition that in the last year of wheat growing, lucerne, the seed of which they provide, shall be sown with the wheat. After this the colonist has to quit, and in this way the landowner gets his land broken up and laid down with a valuable forage crop at a small cost. We say at a small cost, because Mr. GIBSON declares that the share of the grain crops taken by the owner does not cover all the expenses as a rule. Though a calcareous and comparatively dry soil is best suited to lucerne, Mr. GIBSON has found it growing well, or fairly, in all classes of soils in Argentina, but not standing many years in damp situations. On a favourable soil he has seen a lucerne pasture still flourishing thirty years after it was planted. In England Mr. READ has found the crop doing fairly on clays and other soils not considered fit for it. Some care is needed in grazing stock on lucerne, lest they should gorge themselves upon it and become "blown"; but this is true also of clover and other highly nutritious forage crops. We know of few experiments better worth trying than the cultivation of lucerne on various soils and in different climates.

Shorthorn dairy cows.—This famous breed of cattle, of which we regret to see that, in spite of their being the best liked by practical English farmers of all dairy cattle, *Hoards Dairyman* has no good word to say, is still more popular than ever. They are to be found all over England, but the best strains of blood are in the Northern counties. What follows is from the *English Agricultural Gazette*:

SHORTHORN DAIRY COWS—Can you tell me which are the best markets for buying Shorthorn dairy cows? I notice that at Kirkby Stephen last week in-calf cows made up to £24. I have been told that big, good, heavy-milking Shorthorns are to be bought at Kirkby Stephen, Penrith, Kendal, and other places in that neighbourhood.—W. T. H. [You can hardly go wrong over the Northern Counties. Kendal or Kirkby Stephen Auction Mart, in Westmoreland; Carlisle, Cockermonth, Penrith, Wigton, in Cumberland; Lancaster and Ulverston in North Lancashire; Helli-field, in Yorkshire. At the Ulverston Auction Mart recently calves have been selling up to £25. Up to the past few years Cumberland farmers ran more upon flesh, but have given more attention to milk in recent years. If desirous to found a herd of such cattle, personal inspection of farms in a neighbourhood would be satisfactory, for then something might be ascertained as to the sires and dams of the animals selected.—R.]

The new photography.—Some ten years ago, lecturing in the county of Maskinongé, we said that the age of miracles was over and done with; but now it would seem that inventions of almost miraculous effect are of every day occurrence. Among these inventions, nothing seems to us more marvellous than the new photography. As will be seen by the engravings we borrow from the *Star and Witness*, opacity offers no obstacle to the passage of the *cathode ray*, by means of

the *Crookes' tube*. (1) Observe the bones of the hand photographed as if they were bare of flesh, the *pince nez* in its *stui* or sheath; the wooden handle of the bradawl not obscuring the iron shaft of the tool. The invention is in its infancy at present, but there seems to be no doubt that in a very short time it will be of the greatest use in the diagnosis of many diseases, and in the inspection of recondite fractures. (2)

COMPETITION OF AGRICULTURAL MERIT.

THE JUDGES' REPORT

(Continued.)

MR. DAN. DRUMMOND'S FARMING.

On the *light* part of the farm:
1st year—Oats after pasture or meadow.

2nd and 3rd years—Hoeed crops dunged each year.

4th year—Grain, with twelve pounds of clover and two gallons of timothy to the arpent.

Then, mown two years and fed one.

On the *heavy* land:

1st year—After oats, he ploughs a shallow furrow with the *sulky-plough*, and then grubs it across. (3)

2nd year—Maize with interred dung. Maize and *horse-beans* do very well on heavy land.

3rd year—Oats with 12 lbs. of clover and 2 gallons of timothy to the acre, and then 3 to 4 years hay, and 3 years pasture.

Mr. Drummond has this year 15 arpents of potatoes, *horse-beans*, &c.

Any farmer can find in the preceding instances some one or another that will suit his soil. The progress of agriculture would be much intensified if farmers understood better how to treat their land properly.

DIVISION OF THE LAND INTO FIELDS.

The most profitable way of dividing farms into fields is a matter deserving earnest study. Care should be taken by all farmers to arrange their fields in such a fashion that a good system or rotation of crops may be pursued, plenty of alleys left through which to shift the stock from one part to the other without damage to the new grass or other crops. An avenue, or lane, throughout the entire length of the farm is indispensable.

Though we do not give plans of all the remarkable divisions of farms we saw this year, we note, however, than of Mr. Watson, North Georgetown, which was published at p. 20 of the report of '91; the plan of Mr. Doig's farm, at p. 57, report of '90; and the plan of M. Damien Pilon's farm, of which, on account of its great ingenuity we would like to publish an engraving.

FENCES.

We shall speak of fences in the chapter on general management. The neglect of this point is unpardonable. How many quarrels, lawsuits, how much bitter feeling between neigh-

(1) Mr. Crookes (not *Crooke* as the papers spell his name) is one of the leading chemists of the day. He translated Georges Ville's book on manures, but is, alas! what few men of science are—a *spiritualist*.—Ed.

(2) Since writing the above, the accounts of the practical utility of the discovery are astounding.—Ed.

(3) By "*sulky-plough*" may be meant a three-furrow plough. In the original, the phrase runs: *la charrue à roues (sulky-plough)*.—Ed.

hours, arise from this cause? How many fields of grain, of roots, are damaged by the neglect of fencing? A progressive farmer, who has a neighbour careless on this point must suffer untold pangs.

We cannot sufficiently praise the pluck of those who while carting off stones from their land have utilised them by building with them firm, stout walls: they may well be proud of such fences.

This year, the competitors have been very careful, generally speaking about

CLEARING OFF WEEDS,

though these troublesome things occupy a great deal of space on too many farms. Still, there are not so many to be seen on the farms we have inspected. The fact is, the best way to attack them is to have a good system of rotation, with plenty of hoed and root-crops, and an abundance of clover.

If a farm is, unfortunately, infested with weeds, they should be prevented from starting into life, or, if they come up, they should be destroyed. We shall, then, give instances of both these cases, and earnestly intreat our people to strive with all their energy to get rid of this curse which, in many places, threatens to take entire possession of the land.

It would be as well, too, if every municipality were enjoined to deal firmly with the careless farmers, seeing that it is rather awkward for one man to go to law with his neighbour on such a plea as that his weeds infect his land. People do not like to put the law on this matter in force.

Mr. Ogilvie gets rid of the mustard (*cadluck*) on his land by means of a summer-fallow.

M. Hormidas Lapointe kills *couch-grass* by stable-cleaning and two successive root-crops plentifully manured.

Mr. James Drummond says that the *ox-eyed daisy* is a biennial, and that it can be destroyed by pulling off the flowers before the seed is ripe.

Mr. Matthew Moody cleans, every year, a piece of land by sowing buckwheat early; this is ploughed in, and another sowing of the same grain for seed is made, followed by two years' potatoes.

Messrs. Dan. Drummond and Duncan McLachlan grow maize, followed by 12 lbs. of clover to the arpent the next year.

Mr. Nichols grows maize, or pasture, with 3 feet between the rows, to be able to clean the soil the better.

M. Max Mercier makes a fallow (what we call a *bastard* fallow, probably.—Ed.) and sows buckwheat on it for ploughing in green. (1)

THE FARMER'S CLUBS OF ROUVILLE COUNTY.

DR. GIBSON'S REPORT.

(Continued.)

Orchards on heavy land—Ladies at the lectures—Indian corn—Fattening hogs for bacon—Winter butter-making—Fall-calves—Summary.

THE ROUGE-MONT FARMER'S CLUB.

There are 100 farmer's families here; 40 members of the club, and only one cheesery, which is not much patronised.

(1) When we lived at Lachine, the Messrs. Dawes tried this plan, and a nice mess the samples of oats and barley were in the next season: the grain was allowed to ripen.—Ed.