

the spring than when they come into the stables in the fall. It is doubtful if any more frequent cause for failure with sheep exists than the fact that they are compelled to derive their sustenance from poor, run-out fields. It may not always be convenient, but it will pay to give sheep a run of almost as good pastures as any other stock on the farm.

In regard to winter care, no animals are less exacting than sheep. As long as their quarters are dry and free from draughts, they are all the better for not being very warm. Hence, very cheap buildings have frequently proved more satisfactory than the most elaborate. Sheep cannot withstand dampness, nor draughts, nor too much warmth. They should not be kept in large flocks, preferably not more than twenty-five in a group. They should, moreover, be encouraged to go outdoors and take lots of exercise. As to feed, plenty of good clover hay and turnips will prove the most satisfactory and economical. Generally, a little grain can be fed to advantage, especially toward lambing time. The quantity to be fed, however, will depend largely upon the condition in which the sheep are brought in in the fall. Some years, after a good season of grass, and with plenty of clover and turnips on hand, no grain need be fed. Other years, considerable oats, bran and oil cake, the ideal meal feed for sheep, should be used. The careful shepherd should handle his sheep frequently, and be guided largely by this in feeding.

There has, during the past few years, owing to the increased prices of wool, mutton and lamb, been a marked revival in interest in sheep-raising in Nova Scotia. This is extremely satisfactory, not only to the individual sheep-owner, but to citizens of the Province at large, who hail with delight any movement which tends to the improvement of affairs on the farm. It may be that prices will not remain at the same high level as at present, and they need not to make sheep-raising profitable. However, those who are best informed state that there is very little chance for a marked depression in the sheep market for many years to come. In any case, it is the man who stays with a particular class of stock during both profitable and unprofitable seasons, who, in the end, succeeds, and it is to be hoped that increasing numbers of Nova Scotia farmers will, through thick and thin, stay with the sheep "of the golden hoof." They cannot be dispensed with, and their presence in increasing numbers will help to turn to profitable account much produce of the farm that would otherwise go to waste.

THE LARGE, BROAD-BACKED, HEAVY-QUARTERED COW.

Editor "The Farmer's Advocate":

I have been much interested with the articles printed in your valuable paper on the dual-purpose-cow question, and I think if the farmers had stayed with the good-milking Shorthorn cows which some of our fathers had years ago, they would have been further ahead financially to-day. One writer has classed the dual-purpose cow as the rich man's cow, but I think, if she is properly handled, she is the cow that will make the poor man rich; for, if she is the right kind of a Shorthorn cow, she will give milk enough to pay her board, with a good profit, and the steers or heifers raised from her will be worth far more for butcher's cattle than the young stock of the strictly dairy breeds. And I think, if they are properly raised when calves, there will be as large a percentage of them good milkers as in any of the so-called dairy breeds. But the class of Shorthorns that are fitted for the show-ring are not a profitable type of cow for the average farmer to aim at. What I believe he wants is the large, broad-backed, heavy-quartered cows, that will give from six to nine thousand pounds of milk in ten months, and then the other two months of the year will gain up in flesh, and be something worth looking at; for, if a man has a type of cows that pleases the eye, he is likely to take better care of them, and that means more money in his pocket at the end of the year.

My opinion is that every farmer that keeps a stock bull should keep a pure-bred registered bull of whatever breed he takes a fancy to, and, by so doing, he can grade up his herd without any great expense, as the bull is worth nearly as much for beef when he is through with him as the first cost.

WM. A. WALLACE.
Carleton Co., Ont.

GRUB IN THE HEAD.

Editor "The Farmer's Advocate":

Re grub in the head of sheep, the cure that we have adopted for years, with good results, is to put a little spirits of turpentine in the hollows of the sheep's head, just above the eyes, close to the brain, and the trick is done.

J. A. CALDWELL.
Simcoe Co., Ont.

THE FARM.

PRODUCER GAS.

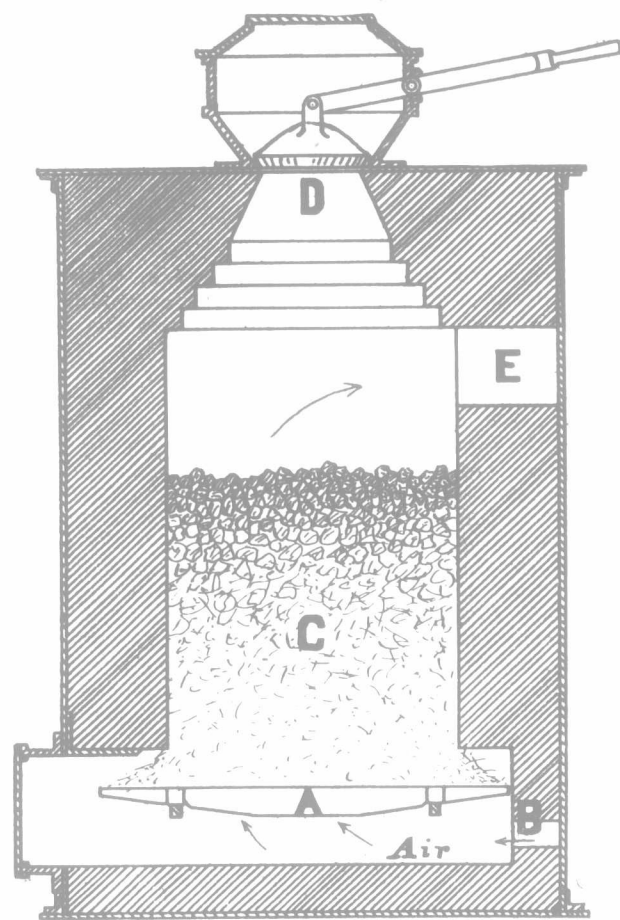
As the question of farm power is an important one, I would like to get posted on "Producer gas power." Would you give an elementary description of it, and your opinion of its suitability for farm use?

J. R. F.

The name "producer gas" is somewhat mystifying when one hears it for the first time. It gives no idea of the source, constituents, properties or uses of the gas in question. Neither can it refer to the person or firm who produces or manufactures it as distinguishing him from the consumer, because each consumer may make his own "producer gas." Perhaps it distinguishes the process of manufacture from the processes by which other gases are manufactured.

The accompanying drawing will illustrate the manufacture of producer gas. "A" represents fire-bars or grate; "B" an air inlet; "C" a column of fuel; "D" a hopper, with close-fitting valve, through which fuel may be introduced; "E" a gas outlet.

It is a well-known fact that when fuel is supplied with too little air for complete combustion, the gases given off are capable of burning and producing power when supplied with the necessary air. This is the principle upon which producer gas is manufactured: A fire is lighted on the grate (A), and the fuel (C) is built up to the



Gas-producer for the Manufacture of Producer Gas.

proper height. A supply of air is allowed to pass from B through A, and the combustible gas formed passes away through the outlet (E), whence it can be led by pipes to the point of consumption. The gas consists of carbon monoxide, hydrogen, gaseous hydrocarbons (chiefly methane or marsh gas), carbon dioxide, and nitrogen. This is called "producer gas." If steam be mixed with the air in proper proportions, some practical difficulties in operating the plant are overcome, and, besides, a gas of greater heating power is obtained, so that in practice steam is almost invariably introduced with the air. Thus, we see that, technically, "producer gas" is understood to mean the gas that is obtained by the partial combustion of fuel in a gas producer. No external heat is used, the heat necessary for the production of the gas being derived from the partial combustion of the fuel from which the gas is being made.

Illuminating gas is manufactured in quite a different way. Bituminous coal is placed in airtight ovens, with an outlet for gas. Fires are built under the ovens, the coal inside being "roasted," not partially burned, for no air can enter. Now this apparatus is a "gas producer," just as truly as that described for making producer gas. The distinguishing feature about producer gas is that it is manufactured by the partial combustion of the fuel from which it is being formed. Hence we see that the name is not really descriptive of the process of manufacture. But so long as we understand what it has

come to mean, we need not trouble ourselves whether the name is happily chosen or not.

The engines used with producer gas would be of the gas-using type, and therefore similar in design and principle to gasoline engines. Hence they would have all the advantages and disadvantages of the latter, and at least two disadvantages besides, viz.: (1) Their usefulness would be more limited, for they could be used only where the gas pipe has been laid. With gasoline, however, the engine may be used wherever it can be taken. (2) The producer gas is less suited to intermittent use than gasoline. The cost of the gas actually used would be less than the cost of the gasoline, but not enough to counterbalance the disadvantages referred to.

Aside from the service rendered, however, the first cost is perhaps the chief item with most farmers. The Ontario Hydro-electric Power Commission has recently issued a report on the cost of power production through the agency of producer-gas plants, and other prime movers under the conditions existing in Ontario. The smallest producer-gas plant estimated on is one of 10-brake-horse-power (B. H. P.) capacity, the capital cost of which is as follows: Plant, engines, producers, etc., \$1,300; installation and accessories, \$234; engine foundation, \$33; building, coal storage, land, etc., \$300; total, \$1,867, which puts this plant beyond consideration for general farm purposes. A 5 B. H. P. outfit, if there is such manufactured, would cost not less than \$1,200 to \$1,500, installed, putting it beyond the range of possibility, too. Hence, considering service and capital cost, under present conditions, producer gas does not appear to be suitable for farm use. Gasoline fulfils the requirements better, and the only initial cost is the price of the engine.

W. H. DAY.
O. A. C., Guelph.

"LONG" FALLOWING ABANDONED IN ENGLAND.

Editor "The Farmer's Advocate":

Your correspondent from Simcoe County, in your issue of the 2nd inst., asks for discussion on summer-fallowing, and, as I have many times heard people in this district talk of the need of summer-fallowing, will give my opinion on the matter. To start with, I do not believe in the summer-fallow. In my early days, in the Old Country, "long" fallows, as they were called there, were customary, a portion of the rotation allotted to roots being fallowed. The "long" fallow has been discontinued there for many years, for various reasons. My opinion is that the hot sun on the bare land the whole summer is injurious. I like the land covered after June. I think, with good cultivation of the land, with a judicious rotation of crops, weed seeds can be destroyed and the weeds kept under. I live in the backwoods district, and have not seen much of outside farming, but my opinion has always been there is not sufficient cultivation given to the land in this country. Lands for grain, broken down, and lying a few days before sowing, will allow a great quantity of weed seeds to vegetate. A large quantity of these weed seeds will be destroyed by the drill and harrowing in after the drill. A light harrow just before the grain is up, where grass seeds are not sown, will benefit the crop and kill the weeds vegetated. The hoe crop, of course, gets cultivation the greater part of the summer. After the grain is off the land, as soon as possible break the stubbles and cultivate the land. This will be a means of keeping down weeds. Give the land a good plowing before the winter sets in.

MUSKOKA FARMER.

MIXED GRAINS AND TURNIPS.

White Russian spring wheat has given the best satisfaction in this county. In oats, Sensation, Twentieth Century, and Banner, are the general favorites. Duckbill barley has done well. Considerable quantities of mixed grain are now raised, especially by dairymen in this section, and, as a rule, more feed can be raised from an acre this way than of any one grain alone. The most popular mixture is oats, barley and peas, using two bushels Banner oats, one bushel Six-rowed barley, and one-quarter bushel Golden Vine Peas. A good many varieties of potatoes are raised; the most popular are Burpee's Extra Early, Beauty of Hebron, and Early Rose, for early use; Carman No. 1, Delaware, and Silver Dollar, for later. We prefer the Scotch turnip seed (grown in Scotland), the variety known as "The Best of All Swedes"; Kangaroo, Elephant and Purple-top Swede also do well. Turnips are more largely grown every year. Corn is not grown, except for green fodder to supplement the pastures; Longfellow gives the best results.

We are having a cold April. At present writing (April 10th), the ground is covered with snow; but so much the better, if it only warms up in a week or so.

C. H. BLACK.
Cumberland Co., N. S.