height by 8 inches in diameter, the walls of which are about 3 inches thick. When these cylinders have been placed close together upon the hearth of a reverberatory furnace, a high heat is applied to them, and the effect of the process is to reduce the iron in the ore to a metallic state. The object of moulding the cylinders as above described, we may remark, is to enable the heat to act rapidly on the ore. Although now reduced to a metallic state, the metal is not fused, as in the blast furnace ; it remains in the form of the original cylinder, mixed with a slag that contains most of the impurities and is known as spongy iron. It is well known, however, that the flame of a reverberatory furnace is naturally an oxidizing flame, and tends to burn up any iron that may be exposed to its action, and the spongy iron is a condition peculiarly susceptible of rapid oxidation. This difficulty has been ingeniously overcome by careful attention to the nature of the slag, which in several ways plays an important *role* in this process. The slag must be an non-flowing slag, so that it will not run away from the iron, but remain as a covering to protect it from the oxidizing flame. It must also be a basic slag, for then it removes the phosphorus and sulphur. In the course of one and a half or two hours the reduction is complete, and the cylinders of spongy iron are ready for mechanical operations of squeezing to remove the slag, and rolling into bars. A better appreciation of the value of this process may result when it is stated that " puddle cinder," which contains an average of over 50 per cent. of iron, and which, owing to the large amount of phosphorus and other impurities, is practically a waste product, may be economically worked by this process, and converted into a good merchantable iron at a single heat. About one ton of " Muck bar " may be obtained from three tons of puddle cinder, and the percentage of phosphorus reduced from 2 per cent in the cinder to less than 0·4 in the metal.

It has required time and money to demonstrate the advantages of this process, but now that they are known we may expect it to supersede all others, for it is steadily coming into favor. It is possible now to obtain a good quality of iron from ores which contain a good proportion of sulphur and phosphorus. And, moreover, by the use of ores quite free from phosphorus an excellent open-hearth steel may be produced by the direct fusion of the spongy iron without mechanical removal of the slag. Practical tests of the iron produced show that it will make the finest grades of crucible steel.

CANADIAN WOOL.

" Twenty thousand pounds of Canada wool, which cost me twenty-nine cents, I offered this week for twenty-four, and could not get even that." Such is the story of a country merchant a few days ago. The statement is made that 750,000 pounds of Canadian long-stapled wool is at the present moment on hand, *unsalable*. We hear of cases in which single holders have lots of from 10,000 to 40,000 pounds on hand, bought at high prices, and offered in vain at a loss of from six to ten cents per pound. American mills have had Canadian wool in store for a year, unable to make use of it. What is the remedy for this ?

Farmers and breeders in Canada must change the character of the wool they grow, or make up their minds to sell it at a low price, if indeed, they can sell it at all. We have already shown (MONETARY TIMES, 1st July) that the bulk of our wool is fit only for making worsteds, coarse yarns, bed blankets, &c. But worsted goods such as alpacas are largely out of fashion, and the wool that suits for making them is no longer in request at home or abroad. Besides, as a large wool dealer tells us : Most of the domestic wool offering now is too coarse even for blankets or etoffes. The result is that our manufacturers have to buy mainly English, Scotch, Cape, Australian, and other finer wools, of which to make Canadian woollen goods. And for this foreign wool 30 to 40 cents is paid, while 22 to 24 cents is the ruling price for our native combing. If, therefore, Canadians would grow the kind of wool that Canadian mills want, there would be no need to go to Europe, Africa and Asia for it, but the Canadian farmer would find a ready market at a greatly improved price.

Finer fibred and shorter stapled wool is a distinctly felt want in this country, and the sooner our growers realize this fact and act upon it, the sooner they will make some profit out of their sheep. And what is more, by obtaining animals which yield the right kind of fleeces, they will receive better prices for their mutton. The country wants other breeds than Cotswolds or Leicesters. The Southdown, and Shropshire Down, will give better mutton and finer (and higher priced) wool, or a cross of the native sheep with one or other of these will improve the quality of both flesh and fleece, and thus put money in the farmers' pockets. To repeat what we have already stated, upon the authority of a grower, *three* Southdown sheep can be fed and kept in proper condition at the same expense for food and room as *two* Cotswolds.

A very important confirmation of the views we have urged is found in the conclusions reached by Professor Brown, of the Model Farm at Guelph, which we give in his own words :

In the fattening of wethers, to finish as shearlings, the Cotswold and Leicester grades can be made up to 200, the Oxford Down to 180 pounds and the Southdown (grades) 160 pounds each (live weight).

Combining wool and flesh value, the Southdown grades give the highest returns—as much as double that of the Cotswold grade and 35 per cent over that of the Leicester grade, also slightly in advance of the Oxford Down grade.

The Professor, in his advance report of the Ontario Experimental Farm, considers it " a point subject to no dispute, that the great, roomy, raw Cotswold sheep will eat one-half more than the hardy, compact Southdown." Having tested during five past years the crosses resulting from pure bred Leicester, Cotswold, Oxford Down and Southdown rams upon ordinary Canadian ewes at the farm, all being fed alike, the following conclusions are reached as to the yield of each sort of animal, in flesh and fleece :

	Cost.	Yield.	
		Wool.	Carcase.
Cotswold grade.....	$9.30	$2.52	$9.95
Leicester do	8.10	2.24	9.90
Oxford Down grade..	7.40	2.80	10.62
Southdown do ..	6.00	2.40	10.20

Showing that, where the Cotswold and Leicester show a profit of $3.17 and $4.04 respectively, the Oxford Down yields $6.02 profit and the Southdown $6.60.

There is something else in the annual report of the Model Farm which should commend itself to our farmers. It is this: " In this country the market value of store cattle can be increased 36 per cent. during six months by good feeding." This statement is founded upon the results of actual experiment. A like result is to be expected in the case of sheep. And even for those farmers who have only Cotswolds and Leicesters, it will pay to give attention to the better feeding and housing of them. "There are too many Canadian farms on which," says a communication just received, " the daily custom in the depth of winter is to fork out upon the snow some pea straw for the cattle and sheep to nibble. The animals are not adequately sheltered, nor properly fed ; how, then, can they yield succulent beef or mutton ?" We suggest, further, that in the case of sheep, it is quite possible that the exposure to the rigours of a Canadian winter must tend to make their wool coarse as well as long. Hence to improve the flesh as well as the wool, shelter and better food is needed. Turnips and carrots might be fed them, and a covered shelter afforded. There are many farmers, we know, who do not need these suggestions, having long ago anticipated them, but there are numbers who would be advantaged by greater care of their cattle.