in the live-stock line is the stimulation and encouragement of sheep-breeding. We are spending nearly half a million annually for mutton from outside points, while large areas of this Province are well adapted for sheep-raising. The presence of the coyote is largely to blame for this in many districts. His presence makes it necessary to herd all large flocks in the daytime, and closely corral them at night, adding greatly to the expense, and even under these conditions some flock owners report heavy losses from them. It is estimated in Oregon that coyotes destroy 150,000 sheep every year, and the Government of that State has recently issued a bulletin on the best methods of ridding the State of this pest. Old Mexico has almost got rid of the coyote by systematic poisoning.

The dissemination of information along these lines among the stockmen in the coyote-infested districts, and the increase of the bounty by the Government, would, I think, be money well spent.

Large sums of money are also sent out of the Province for other live stock and farm produce, while land suitable for the production of far more than we can at present consume is lying undeveloped. The Governments are making strong efforts to encourage agriculture and live stock, but I think greater interest might be shown by our Boards of Trade and other bodies of business men in the agricultural advancement of the Province with good results. The beginner in agriculture should be given every encouragement in the disposal of his produce, and the preference whenever possible be given to local production. A little effort should substantially reduce these leaks, and in time stop them altogether, and conserve for the farmers and merchants of the Province something over a million dollars a year that is now almost entirely lost to them.

SHORTHORN RECORDS.

Editor "The Farmer's Advocate":

In your editorial of March 19th, advising a Record of Dairy Performance for Shorthorns, there are some sentences which require some explanation, in order to enable ignorant persons like myself to understand what is meant. At end of second division you say, "It is not form, but capacity to perform, we are after to-day." That is followed at the top of third division with, "While on this subject again, let us once more emphasize that the call is not to sacrifice beef type and turn undivided attention to milk, but rather to retain the beef type and the beefing proclivities, and to develop in cattle of this type a liberal degree of milking capacity."

Pray, what is form, but type? If form is to be discarded, and capacity to perform in filling the milk pail be the chief consideration, how will you produce the animals with the form and the power to transmit that shape which we must have to give us the bullocks with the kind of body to satisfy the meat-cutter and his customers, in furnishing a proper percentage of high-class and high-priced cuts?

It appears to me that there is great danger at present to Shorthorn interests, and that the breed's admirers have to be on their guard—not the ones of long-time experience, but those who are getting their start in herd-building. The older breeders, from profitable experience, know the good thing in their possession, and will not be tempted to lose sight of form, or sacrifice it in attempting to turn their herds into dairy type, in order to rival the dairy breeds.

While the show-yard has caused some breeders to give their closest attention to the perfection of full-fleshed form, the large majority of Shorthorn cattle in our Province at present lack in form and flesh, and many of them could be much improved by the addition of a tendency to so use their feed as to better their type, from the block standpoint. We have, in some parts of our Province, Shorthorn cattle—registered ones—bred along dairy type, and kept in dairy-cow condition of flesh, which are no credit to the breed or breeder, and most certainly are not a profitable kind to have in the field or stall.

At the Ottawa Winter Fair we saw specimens of fat steers, bred and fed along such lines, on exhibition. Their form and condition were such as might please the dairyman, but woe to the people who endeavored to eat that beef from said steers, as later on, placed on exhibition.

The idea of ever leading Shorthorn breeders to endeavor turning their herds into dairying machines belongs to some very hopeful body. How many of them in our Province will be induced to take up the task of milking their cows and hand-feeding the calves, in order to find record-breakers along a line which is but a secondary consideration, after all, so far as Shorthorns are concerned? It is too pleasant and profitable an occupation to stand aside and watch the calves helping themselves, saving us so much hard labor, while they are constantly growing the dollars for us. The cow or heifer which furnishes milk in such abundance as to grow, month by month, the strong, vigorous, full-fleshed calf while she is slowly reducing in flesh, is a good enough proof to the interested observer that a profitable combination of tendencies to produce beef and milk is present in her make-up. That is the best record of performance which any breeder can secure in breeding Shorthorns, and is also the surer test for the purchaser of the young bull, who aims at getting one to produce for him the dual-purpose cow.

Kindly explain, Mr. Editor, what and who are meant, in your fourth division, where you state, "But the dual-purpose cow must occupy the field which certain dairy authorities have been kind enough to reserve for the special-purpose beef cow." Who are the kind ones?

Lower down, you have, "It is a very bold beef-making experimenter who will claim that the average beef-bred male calf could be purchased at birth for over five dollars, and reared for beef, to show a living profit over cost of food consumed." Quite true the statement is. It is the whole truth, and nothing but the truth; just as true as that the average dairy cow does not pay for the feed she consumes. The fault is not with the beef animal, nor the dairy cow; but the people who breed and own them are the guilty ones.

We can and do breed, feed and finish beef cattle which pay well for the feed consumed, and many dairymen can say the same of their herds. It is done by specializing along right lines, not by attempting to make dairy cows out of our Shorthorns, nor by using Hereford bulls on the Holstein or Ayrshire grade cows while seeking to produce the 10,000-pounds milch cow.

A few years ago, in Prince Edward Island, an opinion was urgently asked regarding a Shorthorn bull of the dairy type, which had been purchased to use in a fairly good dairy herd of mixed breeding. Reluctantly the statement had to be made that, while the cost was fifty dollars, the actual value was less than nothing. The animal had a typical pair of horns, but all else was scrub type, from end to end. That was a case of where "Not form, but capacity to perform," was sought for, as you state.

The losing sight of the main object in growing stock, which should be the securing of the largest possible profitable returns from the feed and care given, is causing untold loss annually. If stockmen generally would, as some now do, be determined to breed and raise to maturity none but the best of the kind they produce, we would not be troubling ourselves with seeking to become rivals, but would encourage each other to still further our prosperity. JOHN CAMPBELL.

Victoria Co., Ont.

RATIONS FOR PIGS AND CALVES—CEMENT FLOORS.

1. Have a number of small pigs, from 3 to 4 months old. My feed supply consists of pulped roots; ground corn, at 72c. a bushel; barley meal, at 67c. a bushel; good shorts, at $1.25 per cwt.; bran, at $1.15 per cwt.; oat chop at 46c. a bushel. Give best way of feeding the same.

2. For young calves, feed consists of chopped corn, barley, oats (chopped and whole), bran, oil cake, roots and mixed hay, with skim milk. Kindly give best mixture from above feed.

3. Have a registered Shorthorn bull, 2 years and 10 months old, weight 1,750 pounds. Give most suitable feed to produce growth. He is worked heavy through the breeding season.

4. Hogpen, 24 x 60; I wish to put in cement floors this summer, also cement troughs. Would like if you could give me some information as to amount of gravel and cement it would require; also so what proportions of each should be used, also best plan of making the troughs. R. T. M.

1. To me it looks as if the cheapest foods in this collection are the corn and shorts. The bran, of course, is not high-priced, but it would not be suitable for feeding to these young pigs, unless it were used in a very small quantity. A mixture of about four parts of shorts and one part of corn would make a very good mixture to start with, and then, if thought advisable, the corn could be gradually increased, though I think it would be advisable to continue the use of the middlings throughout, as they look like good value for the money, as compared with the other foods.

2. It is somewhat difficult to make a selection from this list and say that it is better than any other selection which might be made. There are so many foods mentioned here which will answer the purpose of feeding calves that it is somewhat hard to say just which would be best. I would not advise feeding very much oil cake with skim milk, but would be inclined to use the corn and oats quite freely. A mixture of ground corn, and either whole or ground oats, should work in very nicely with skim milk. But both these foods, as a rule, are relished by calves, and this is another advantage in their favor. A little bran possibly might be introduced in the mixture, but I do not think it would be necessary. I would not care to recommend barley for very young calves. Roots, of course, are always good, and should be fed as freely as the calf will take them; and hay is necessary to give bulk to the ration.

3. This bull weighs very well for his age, and should get along well on the rations mentioned. A mixture of oats and bran, about equal parts by bulk, together with clover hay and a few roots, if they are available, should give excellent results as a ration for this bull. Would not advise feeding very much oil cake unless the bull were being fitted for show purposes. The oats, bran, clover hay and roots will furnish abundance of nutritious food, without oil cake.

4. The amount of gravel required for a cement floor is not materially lessened by the cement that is used, because the cement simply fills in the spaces between the particles of gravel or sand, and adds very little to the bulk. Therefore, to get the number of cubic yards of gravel, if we assume that the floor is to be four inches thick, we would multiply the length by the width, and by the thickness in feet, which would give us the cubic feet. For instance, since the pen is 24 x 60 feet, the cubic feet would be 24 x 60 x 1-3 = 480 cubic feet. This, divided by 27, would give the cubic yards of gravel. The proportion of cement to gravel will depend largely upon the kind of gravel and sand that are used in making the floor. If the gravel is clean and of extra good quality, and the sand is sharp, with no earthy material in it, less cement is necessary than if the gravel and sand are not so clean. Where about one of cement is used to eight parts of gravel for the grout, and about one of cement to three of sand for facing, it would probably require about fifteen barrels of cement for each one thousand square feet, counting grout three inches thick, and facing about three-quarters of an inch thick. A very good shape for a cement trough is one having the front not more than three and a half inches high, and sloping slightly from the top to the bottom inside, making the front of the trough a little thicker at the bottom than at the top. The bottom of the trough may be about eight inches wide, and flat, and the part next to the passage should, of course, be vertical, and is better if eight or ten inches high. The cement trough is usually made by making a mould the shape of the trough and the size of the outside measurement of the trough; then a core is made, which is set inside of this frame or mould, and the cement filled in between the core and the mould. In this way, the trough can be made any shape desired.

Ontario Agricultural College. G. E. DAY.

A WORD WITH HOG-RAISERS.

Editor "The Farmer's Advocate":

The producers of hogs in Ontario, perhaps more than those interested in any other line of farm products, have felt the effects of trade depression during the last few months. They have been confronted with abnormal conditions. The high prices of the last few years found them with large stocks of hogs. The partial failure of crops, and the exceedingly high prices of coarse grains and millstuffs, coupled with a disastrous fall in prices, stampeded a large number out of the business, and even the steady, cool-headed ones who stayed in have had their faith and courage severely tried by the conditions during the months of winter. The depression in trade threw thousands of men out of work in all manufacturing centers everywhere, and especially in the United States. As a consequence, consumption has been restricted to probably not more than 75 per cent. of normal, and recipts of hogs at the great receiving points have been very large, owing to farmers forcing breeding sows, half-finished stuff and young pigs on the market. The tide has now turned; public confidence is being restored, and we are slowly returning to normal conditions. The stocks of hogs have been so reduced in all producing countries that it is only a question of a short time when an actual scarcity will develop. Now is the time to cull out inferior breeding stock and replace it with superior stuff at moderate prices. The problem of economic feeding during the next few months is of especial importance, owing to the still high prices of all hog foodstuffs. Market conditions need to be carefully studied, and the prices of different feeds taken into consideration. Under present conditions, it is not necessary to say anything of the danger of overfeeding, but, with the average man, the tendency will rather be to parsimony. Many will just attempt to keep their hogs alive until after harvest, and this, especially with spring litters, is a very costly policy. Under present conditions, the use of green foods, either for pasturage or for cutting and feeding in the pens, is of especial importance. Owing to the scarcity of farm labor, saving of manure, and superior health of the animals, I am decidedly in favor of pasturing during the summer months.

Fortunately, the red clover was a fair catch last summer in most of the country, and has come through the winter in excellent condition. Where alfalfa is grown, it is perhaps the best forage plant we have for hogs, and these plants give the best returns in gain when fed along with a little corn and whey, the nitrogenous clovers balancing up well with the carbonaceous corn.

Where clover is not available—and, unfortunately, some sections lost their clover—a good plan is to make a mixture of say 1½ bushels peas, 1 to 1½ bushels oats, and 3 pounds of rape, per acre,