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### Flax and Pea Meal.

SIR,—I am feeding a quantity of cattle, and I would like to get your opinion as to flax meal for feeding. I am well aware it is very nutritious. I would like to know what proportion pea meal bears to flax meal. Do you think it advisable to feed much flax meal when I can get pea meal for one cent per pound? Flax meal can be bought in Peterboro for 3½ cents per pound by the quantity. What quantity would you advise to feed?

C. D., Peterboro, Ont.

The relative value of pea and flax meal has not been fully determined by exact experiments, and no arbitrary rule can therefore be laid down as to the exact proportion of their substances required in the most economical rations for fattening animals.

It is well known that a variety of alimentary substances are required in the food of animals to maintain a healthy and symmetrical activity in the nutritive process.

When the ration contains a great preponderance of one class of alimentary materials, the addition of even a small proportion of another class of proximate principles may aid in the digestion and assimilation of the substances that are in excess, but from the complexity of the conditions presented it would be difficult to decide as to their relative values.

In the theoretical discussion of the subject of nutrition, the arbitrary classification of foods into "nitrogenous, or flesh formers," and "respiratory, or combustion elements," has been too generally considered of the first importance.

Dr. Dalton remarks, in his able work on physiology, that "the nutritious character of any substance, or its value as an article of food, does not depend simply upon its containing either one of the alimentary substances mentioned above in large quantity; but upon its containing them mingled together in such proportions as is requisite for the healthy nutrition of the body. What these proportions are cannot be determined from simple chemical analysis, nor from any other data than those determined from direct observation and experiment."

While those who have discussed this subject from a chemical standpoint exclusively have insisted upon the amount of nitrogenous materials contained in an article of food as the proper measure of its nutritive value, the experiments of Lewis and Gilbert seem to show that "the comparative feeding value of our current stock foods depends more upon the digestible non-nitrogenous substances they contain than upon their richness in nitrogenous compounds; but the richer the food in nitrogen, the more valuable will be the manure."

From the present state of exact knowledge on this subject, it would hardly be safe to say that "oil cake meal" has a higher feeding value than pea meal, unless it be in some special instance where the ration was decidedly deficient in some element that would be supplemented by an addition of the former.

With a ration of ordinary cattle foods, con-

taining pea meal in fair proportion, the addition of "oil cake meal" or "flax meal" would undoubtedly be advantageous in furnishing a greater variety in the form of the alimentary materials and a possible improvement in their proportions, but if the price is two or three times greater than the price of the pea, meal they cannot be recommended as a substitute to any great extent, on the ground of economy.

When oil cake is fed to cattle, from two to six pounds a day is a common ration, and larger amounts are frequently fed where the manure produced is the leading consideration.

The value of the manure obtained from feeding a ton of oil cake or a ton of flax-ends is considerably more than that from feeding a ton of peas; but judging from the results of experiments, the oil cake and flax seed have not a sufficient advantage in nutritive value to compensate for the high price named by C. D. for "flax meal."—[Manly Miles, Lansing, Mich.]

### Tax our Bulls and Stallions.

SIR,—I see by your paper that you are quite in earnest about that now very important question to Canadian farmers, the "exportation of cattle to Great Britain." And being a young farmer, I feel quite interested in the question also, and would like with your permission to suggest a plan which I think would assist in grading up our cattle a little faster than we have been doing of late.

I am much pleased to see that many of our leading farmers are beginning to see the importance of the matter, and are enquiring for well-bred bulls with which to improve their stock. But there is one little difficulty I notice in connection with this; many of them prefer using a half-bred animal at 75c to paying \$1.50 to \$4.00 for the use of a thoroughbred. This I consider a great mistake, as the fact is so well established that a halfbred, though perhaps superior in size and appearance, is not nearly so good to depend on for getting superior stock as a thoroughbred. Besides that, such conduct is very discouraging to those who are endeavoring to improve the stock of the neighborhood by keeping thoroughbred animals. To obviate this difficulty I would suggest that a tax, of say \$10, be imposed upon all bulls kept, or known to be used by any except the owners for breeding purposes. This I think would put a stop to the keeping of a lot of those bony races we now see running over the country, and whose services may be procured at any time for 25c. to 50c., as their owners would find that they would not pay the tax above expenses.

This system I think might also be advantageously applied to horses and pigs, but deem the breeding of good beef of the most importance just at present, as I see in our leading markets that beef is quoted from 2½c. to 6c. Just think of the difference! A good steer three years old weighing 1,700 lbs. (as he may easily be made to do) at 5c. per lb. is worth \$85; while one the same age weighing 1,000 lbs., and selling at 3c. per lb., would only be worth \$30. Then which is the most profitable, even if we allow \$10 extra for the superior animal when a calf, and \$10 extra per annum for feed and care; in all \$40. We find that there is still \$15 most profit in him, and you see for an example I have not taken the extreme weights and prices I might have done.

JACOB, Simcoe, Ont.

### Petroleum Tar.

SIR,—You would oblige if you would inform me if it is the raw or refined petroleum recommended in the ADVOCATE as a preventative for timber rotting in cellars.

J. C., Wilfrid.

[Petroleum tar is the proper kind to use. It should be put on the wood as hot as you can put it on, and in hot weather; it is then thin and will soak into the wood. A barrel of oil is sufficient to cover 8,000 feet of surface. It is not of so much value on timber exposed to the sun, but on timber underground and in cellars, or where the sun does not strike, it has been found most valuable, and should be used by those who are erecting buildings or fencing that they wish to last. There are several oil refineries that can supply it. The price differs according to quantity required; the present price is \$3.50 per barrel.]

### Granges.

SIR,—Seeing it is contended by some that the Grangers are an excellent and useful body, the thought has occurred to me that if this society is as good as it is sometimes reputed to be, how is it that it does not succeed better and become more generally appreciated? It is true that since the organizing of Grange lodges has begun to be agitated in Canada a considerable number of these mysterious organizations have sprang up, and even now, no doubt, not a few of these are living and flourishing.

But yet, although farming is a national occupation, the kind of farmers' clubs under consideration have not been received with anything like national favor.

Now it is truly a good thing for the farming community to organize, and any who speak or write against such is no friend of the class. The aim should be to resist monopoly, disarm cheating, and stand up for right, and also to diffuse knowledge.

But it being conceded that there are several methods of killing cats, we submit that there are other methods of arriving at the results above named; and whilst hoping that the Grangers may continue to meet with all the success and encouragement which they deserve, we believe that there is a better way; what that way is we will try and explain in your next issue.

D. McK., Megantic.

### Apatite.

SIR,—Would you be kind enough to answer the following questions, or give me some information about making superphosphate of lime out of "apatite." I am a farmer, and want to make it for myself:—

1. What weight of ordinary commercial sulphuric acid is required for say 100 lbs. of apatite.
2. How much should the acid be diluted before mixing it with the apatite?
3. If the apatite was ground as fine as oatmeal, how long would it take to be changed into superphosphate?

Any information would be thankfully received by several other subscribers as well as myself.

ENQUIRER.

[We are not prepared to answer these questions as correctly as we would wish. Perhaps some of our readers may kindly reply in next issue.]

### Russian Wheat.

SIR,—In the spring of 1877 I sowed one bushel and a half of Russian spring wheat, and threshed 28 bushels from it. It was the third crop of wheat without manure; on same field we had only 20 bushels per acre of red chaff. I sold some of it at \$1.50 per bushel. Last spring I sowed 10 acres with Russian wheat, and had over 22 bushels per acre; while we had only about eight of red chaff. A neighbor says he had over 13 bushels per acre more of it than of any other kind on the same kind of land. I would rather pay 75c. per bushel more for it for seed than any other kind I know of. The Clawson fall wheat has done the best in this part of the country. We had 33 bushels of Treadwell last year. We like the FARMERS' ADVOCATE very much, and would not be without it. Every farmer should take it that does not take another.

W. B., Vandeleur, Ont.

### Top-Dressing Wheat.

SIR,—Please let me know in the next issue of your excellent magazine what you think about top-dressing fall wheat in the spring with unleached ashes; at what time to sow them, and how much to the acre. What are your views about mixing the ashes with salt, and in what proportion the one to the other; and how much of the mixture to the acre? Cannot good hard-wood ashes be turned to better account on a farm than selling them to the asheries for a few pounds of soap of third quality?

H. R., Glenallan, Ont.

[Top-dressing wheat has been found very beneficial, greatly increasing the yield. There is no better fertilizer for almost any crop than unleached ashes, as they are very rich in potash. It is said by some that the application of them to wheat as a spring top-dressing is not unfrequently a cause of rust. If this opinion be correct, the very best remedy is to mix them with salt. Two hundred of salt to the acre may be safely used, if mixed with ashes.]