

reason why the residue should not be applied in a very finely ground state. Yours truly,

J. B. LAWES, Rothamstead.

To Arthur R. Jenner Fust, Montreal, P. Q.

NORWOOD LODGE,

Ste. Anne de Bellevue, Oct. 26th 1882.

My dear Sir,—In answer to yours of the 19th instant wishing a statement of the yield of butter and milk from my herd of Jerseys, not having tested them all separately, I can only give a few tests. One of the two year olds' Norwood's Queen, first calf, gave (on grass) 14 qts. per day of very rich milk. Another a 4 year old, gave 17 qts of milk, per day, from which was made 9½ lbs butter, per week, (on hay only); she, afterwards, having been better fed, gave 20 qts and 14 lbs 1 oz butter. Another gave 14 lbs per week. The herd averaged for 3 months, on grass, 1½ lb butter each per day. The milk is very rich. Some of it was tested with Champion Creamer at the exhibition of 1882, and from a setting of 12½ inches of milk 5 inches of cream were taken, I was shown a test (by the same creamer) of a celebrated herd of Jerseys in Ontario, and from a setting of 16 in. milk 6½ in. of cream was taken. Hoping you will find the desired information, I remain yours resp.,

W. A. REBURN, per GEO. W. H. R.

Mr. Reburn's statement may be depended upon. Mr. Drummond, of Petite-Côte, has an Ayrshire cow, v. p. 117, which has given as much as 18½ lbs of butter a week for some weeks in the flush of the grass. It is very desirable that an official test of the produce of such animals should be had, and next spring I shall be very happy to aid in obtaining one.

A. R. J. F.,

**Cotton Seed Meal.**

The following article is condensed from the "Country Gentleman."

About six or seven years ago, I began to feed my cows with cotton-seed meal, and have continued its use ever since. My cows are kept for making butter, and it is, therefore, necessary that this food should be not only productive in quantity, but the quality must be looked to as well. As no one can live upon beefsteak or essence of beef and remain healthy, so the meal cannot be used alone. Professor Atwater, in his report of the Connecticut Experiment Station, 1882, gives the following as the composition of feedings generally in use.

	ORGANIC MATTER				VEGETABLE MATTER				Nutritive ratio
	Albuminoids	Fibre	Other Carbo-hydrates	Fat	Albuminoids	Other Carbo-hydrates	Fat		
Cotton seed meal.	41.6	3.1	24.4	18.0	33.2	17.6	16.2	1.8	
Corn meal.....	8.9	2.0	70.8	4.1	8.2	66.8	3.1	9.2	
Bran.....	12.6	2.5	67.0	2.2	10.6	50.0	2.3	5.3	

By this, we see at a glance, that though cotton seed meal contains a great deal more nutritive matters than corn, it cannot take its place with advantage. The equivalent of fat in terms of starch is 2: 5; thus we have:

Cotton seed meal equals 91.3 0/10 of nutritive equivalents.

Corn meal equals 82.7 0/10 of nutritive equivalents.

But cotton seed contains nearly five times as much albuminoids as corn meal, and in this lies its great value to the feeder; the albuminoids resembling the flesh-meat of human diet.

Nitrogen cannot be used in so large a quantity in animal food as carbon, for it would unduly enrich the blood, and

(1) Apatite is a crystalline form of phosphate. A. R. J. F.

throw too much work upon the kidneys, the principal duty of which organs is to eliminate the nitrogen from the system. Carbon is, on the other hand, needed in large quantities for the sustenance of vital heat. And we have often found that too much cotton seed meal given to cows produces garget or udder clap, a malady almost invariably arising from over richness of blood. In horses and pigs, the same cause produces congestion of the brain, *vulgo*, staggers.

After long experience, I find the safest ration to be: one quart cotton-seed meal, one quart of corn meal, and one of bran, given twice a day, for a cow in full milk. The effect of cotton seed meal on the butter is to harden it, to give it a good texture, and a fine nutty flavour. I must advise all to pay great attention to their cows while on this meal; they should never have it within two months of calving, or within ten days afterwards, and it should be given in small quantities at first, gradually increasing till the animal gets used to it. The best plan is to mix one ton of corn meal, one ton of bran, and one ton of cotton seed meal, on a floor, and then your men will not be able to use too much of the last material, as they are very apt to do if they get a chance: seeing how much good a small quantity does, they are naturally inclined to try doubling it.

A. R. J. F.

**Hampshire Downs:** My readers will see in our next, a letter from an American on the Hampshire Downs at the great London market. The sheep exhibited at the R. A. S.'s annual meeting and other great shows are doubtless crossed with the Southdowns, but the sheep I propose as the most useful for this province are not show sheep at all. Mr Cochran's Shropshires would beat them into fits at any exhibition. But they are the earliest maturing sheep we have in England, and I believe them to be the most profitable to the farmer. They sell for precisely the same price per stone as the Southdowns.

Mr Wrightson, Principal of the Agricultural College at Downton, near Salisbury, Eng., writes: "The fact that Hampshire lambs are capable of reaching 76 and 80 lbs. carcass weight by August 12th, is in itself astonishing and perhaps incredible to many. As we realised 72s. each for 100 wether lambs on that day, we may be allowed to mention the fact as proving the wonderful aptitude of the race for early development. The knowledge of this is gradually spreading. We do mean its appreciation by agricultural journalists or leading men, but by the rank and file of farmers. A fact may be what is called known—i. e., recorded—but it is another thing for it to be grasped and acted upon by men who, comparatively speaking, never read even an agricultural paper. It is in this sense that a knowledge of the wonderful value of the Hampshire Downs is spreading. A demand for ram lambs of this breed is springing up in Lincolnshire, in Yorkshire, and in the Midlands. The cross-bred lambs are hardy and fast growing; they are less subject to illness and the market price of the mutton exceeds that of any long-wooled sheep. And, moreover, the wool of the Hampshires has for the last few years sold at a comparatively higher price, thus placing them at an advantage to their rivals, the longwools, in both the important points of produce. A large dealer sold four Hampshire lamb rams last year in an important district in Yorkshire. This year, he has had no difficulty in disposing of a hundred in the same locality."

**First steps in Farming—Young man's Department—Cattle feeding.**

I am glad to get back to our subject again; and I hope to be able to continue it throughout the winter without a break