

an erroneous idea that the nodules of phosphato of limc found in the "Crag" or "Green sand stone" are the fossil remains of the dung of extinet animals, "Coprolite" bearing that meaning, or nearly so, in Greek. The following table shows the result of the seven trial plots.

TURNIPS TOPPED AND TAILED.

MANURE.	PRICE PER ACRE.			WEIGHT PER ACRE.		
	£	s.	d.	ton.	cwt.	qr. lb.
1 Ground coprolites	1	7	6	12	10	1 14
2 Bone meal	2	2	4	15	6	3 17
3 Dissolved bones	2	16	0	16	2	1 16
4 (1) Superphosphate	2	2	0	15	1	0 0
5 do. and ground coprolites	1	13	9	16	1	0 0
6 Dissolved bones and bone meal	2	9	2	16	8	2 16
7 Usual manure (1) Mineral.	2	14	0	20	8	1 6

The usual manure is the mixture of Peruvian guano and bones mentioned above.

The coprolite (same constituents as our apatite) turnips came away very shly, were late to the hoe, and made no great improvement until September; they then made fair progress, but they were always full of blanks.

Bone meal—irregular like the former; made no progress all the summer, but improved very much in the autumn.

Superphosphate—the reverse was the case, nothing could come better or more rapidly to the hoe; but they fell away towards autumn, and did no good after October.

Dissolved bones and bone-meal—started well, and came in second up to the end of September, when they passed the superphosphate (mineral), and kept first.

Ground coprolite and superphosphate (mineral), made good progress, but did not equal the last.

To my mind the experiments are highly satisfactory, and prove that Lawes and Gilbert have been right all along in saying, that turnips want a dose of Ammonia, as well as mineral manures. The "usual manure" containing as it does 187lb. of Peruvian guano, or about 18½ lb. of ammonia, fills up the vacuum, and its effects are seen in the superior yield of four tons over the best of the other plots.

Coprolites evidently require some time before they become available for plant food, they are not, in other words, calculated to force the young plants forward to the hoe.

Bone meal is more quickly at work of course; from the decomposing cartilage ammonia is evolved, and the rapid growth of the infant plant is the consequence, this is most important, as the escape of the young turnip from the fly is dependent upon its quick growth.

Nos. 5 and 6 are about on a par. They clearly show that a quick acting phosphate is necessary in combination with the slower coprolites and bone-meal.

In no. 7 we see the ammonia in the guano start the plant, and bring it rapidly to the hoe, the dissolved bones then do their share of the work, and the bone-meal, supplementing, the other two, carries on the growth until the end of the season.

There is no doubt however that the fearfully pluviose year, 1879, has been a most unfortunate one for all the experimenters on ground apatite &c.: the wet and cold season has prevented them from acting as rapidly as even their torpid nature would allow with an average amount of sunshine. The above experiments were tried with "Yellow Aberdeen" turnips; I subjoin another lot tried on Swedes, which confirm the foregoing conclusions, I should add that Mr. Brown feels convinced that his extravagance in this series has been very great, as one half of the quantities of coprolites and superphosphat.s would have yielded an equal return.

	Quantity.		Price per acre.	Weight per acre.	
	cwt.	qr. lb.		t. cwt.	qr. lb.
1. Guano.	4.	2. 0	2.16. 3	18.	2. 2. 0
2. Superphosphate	12.	0. 0	2.17. 6	16.	18. 1. 0
3. Ground coprolites.	15.	0. 0	4. 2. 6	14.	10. 0. 0
4 Guano £18.2.	2.	1. 0	2.16.11	17.	10. 2. 0
Superph. £18.9.	6.	0. 0			
5. Guano £18.2.	2.	1. 0	3. 9. 5	16.	8. 0. 0
Gr. cop. £2.1.3.	7.	2. 0			
6. Gr. cop. £2.1.3.	7.	2. 0			
Superph. £18.9.	6.	0. 0	3.10. 0	16.	6. 1.18
7. Guano £18 s. 2d.	1.	2. 0			
Superph. 19 s. 2 d.	4.	0. 0	3. 5. 5	16.	18. 2. 7
Gr. cop. £1.7.6.	5.	0. 0			
8. Guano 19 s. 7 d.	1.	2.18	2. 6. 6	18.	14. 2.10
Dis. bones, 12 s. 7 d.	1.	2.18			
Bone meal, 14 s. 1 d.	1.	2.18			

Mr. Brown may be thoroughly trusted to have conducted his experiments with every possible care and attention, as he has long been engaged in practical agriculture, is the author of many valuable communications to the various farming journals, and heads the first class of those students in the Principles of Agriculture, who last year submitted themselves to the Government examination.

ARTHUR R. JENNER FUST.

Hereford Cattle.—I do not know whether it is generally known here, that the practice of the men who breed Herefords is to allow the calf to run with its Dam all the season.

The cows calve in February and March, and the young ones are weaned towards October. The mothers are dried off, and of course, being never milked, they are in fine condition for calving in the spring, without much expenditure being incurred for their winter's keep. Here and there, a herd is kept for the pail, but the general rule is the one I have mentioned. No wonder the cows are only moderate in their yield of milk, and dry off, of their own accord, in early winter; for long habit has become second nature, and, if 10 quarts of milk satisfy the calf, the mother will give no more, but put the unused remainder of her food on her own body.

A. R. J. F.

Lighting Stables.

Stables should be moderately well-lighted, but we should avoid throwing the direct rays of the sun on the horse's eyes from the front. If too dark, the eyes become habituated to this, and in the absence of the customary stimulus of light, become less able to bear it; and when suddenly taken into the glare of sunshine, and especially of sunshine reflected from the winter's snow, they are liable to suffer from irritation and inflammation. If, on the other hand, the light falls directly on the horse's eyes from a window in front, the constant glare may of itself injure the eyes. In the one case, we have the condition of horses in mines, where the darkness and inevitably accompanying damp lead to an extensive prevalence of blindness; in the other we have that of the glass-blower or iron-puddler, whose bleared eyes betray his occupation. The light should be abundant, but should fall from windows placed behind or to one side of the stables, and not in front. (1)

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(1) On a North-eastern, or Northern, exposure, one single pane of heavy glass to each stable will be found to give sufficient light without hurting the horse's eyes. That is our experience. E.A.B.

Dairy Management in Winter.

Dairymen are learning every year more and more about their business. It used to be considered good management for a dairyman to get through the winter season with as little expenditure of food as possible. It was a common thing for a smart one to boast how cheaply he had carried his herd through the cold season, principally on straw, saying: "They are a little thin, but they will pick up when grass comes." This man did not seem to realize that the "picking up" would all be expended on the recor-