

is a matter of the utmost importance. Farmers in general are quite unaware of the extent of the mischief which they thus suffer. In a single pint of red clover as many as 1,600 seeds of plantain have been found; and in a pint of white clover have been detected by careful observation by means of the microscope, 11,200 small seeds of various kinds of weeds! It thus becomes easy to account for the dirty state into which much of our pasture as well as arable land has fallen.

### Care and Food of Live Stock.

At this inclement season of the year, the farmer's best attention should be devoted to the management of his live stock. Not only should shelter and warmth be provided, but special care must be bestowed on all matters relating to cleanliness, feeding, and ventilation. In this country, animals suffer more from want of systematic feeding and cleanliness than from cold, a low degree of which they can tolerably well endure, if unaccompanied with dampness. It is fortunate that in our severest weather, the atmosphere is generally still and dry. With buildings properly constructed, so as to prevent cold currents of air, and yet admit a sufficiency of that essential element, stock, with due attention to cleanliness and feeding, may be carried through our long and severe winters without any extraordinary difficulty, or risk of their health.

The use of straw as food to cattle forms a portion of a very valuable prize essay of Mr. Evershed, which appeared in a recent number of the *Journal of the Royal Agricultural Society of England*. The writer is of opinion that, although it is a common plan in many of the grazing districts of England, where roots are comparatively scarce, to feed store cattle on about 20lbs. of straw and 3lbs. of bean meal, yet that they do better on straw with roots instead of meal, even when the supply of roots did not exceed  $\frac{1}{2}$  cwt. per head, a day. Cattle wintered on straw and meal only became "hide-bound," with staring coats. It is calculated that the average production of straw per acre is  $2\frac{1}{2}$  tons; that not more than four cwt. of straw enters into the composition of a ton of farm

yard manure; the remainder being, excrements 6 cwt. and rain water 10 cwt. The consumption of straw-chaff by a cart horse is put down at one ton per annum, at least; cattle at 21 cwt. per annum; and for the sheep on a farm of 400 acres, 8 tons of straw-chaff yearly. On an arable farm of 400 acres, therefore, Mr. Evershed calculates that there is required for the fodder of 50 head of large stock, whether horses or beasts, at least 50 tons; for sheep 8 tons; for storing roots, when wheat is reaped, waste from thatching, making foundation of stacks, &c., say 5 tons; total 63 tons of straw. This article of straw, when finely reduced by the chaff-cutter, is more readily eaten by animals generally.

We also find in the same number of the *Society's Journal*, an interesting report by Professor Voelcker, on the results of his experiments, which appear to have been conducted with great care and originality, on the feeding properties of several substances. The following results of his analysis of two varieties of Kohl-rabi, of cabbage, and of mangel wurzel, and of the repose pulp after its distillation, will be interesting to our readers:—

	Green top.	Purple top.
Water .....	86.020	89.002
Oil .....	.227	.177
*Soluble compounds .....	2.056	2.006
Sugar, gum and pectin....	6.007	4.486
Salts soluble in water....	.970	.919
†Insoluble protein compound	.360	.269
Digestible fibre and insoluble pectinous compounds	2.933	1.896
Woody fibre (cellulose)...	1.230	1.106
Insoluble mineral matters..	.197	.139
	100.000	100.000
*Containing nitrogen .....	.329	.321
†Containing nitrogen.....	.048	.043
Total Nitrogen .....	.377	.364
Per centage of ash .....	1.167	1.058

A comparison of the preceding results, with the analysis of swedes, mangels, and turnips, shows that theoretically kohlrabi is much more nutritious than white turnips, and fully equal, if not superior, to swedes and mangels.

The composition of the heart and inner