Formulating Rations.

If we wish to formulate a ration, we must first make a trial ration of the foods we wish to use, find out how much of the different nutrients it contains, and, if the nutrients are not in the right proportion, we can add to or take away from the quantities of foods used in the trial ration. Suppose we wish to form a ration from clover hay, ensilage, and bran. For a trial ration we might take, bran, 8 lb.; clover hay, 6 lb., and ensilage, 40 lb.

By referring to the table we can find the amount of digestible nutrients in 100 lb. of each food, and therefore to find the amount in 1 lb. we must divide the numbers given in the table by 100. Thus we get:

—	Protein	Carbo-hydrates.	Fat.	Total organic matter.
1 lb. bran contains	.126	.441	.029	.824
1 lb. clover hay contains	.065	.349	.016	.785
1 lb. ensilage contains	.013	.140	.007	.242
Therefore				
8 lbs. bran contain	1.008	3.528	.232	6.792
6 lbs. clover hay contain	.390	2.094	.096	4.710
40 lbs. ensilage contain	.520	5.600	.280	9.680
Total	1.918	11.222	.608	21.182

Comparing our trial rations with the American standard, we see that it is too low in all its constituents, especially in carbohydrates and total organic matter. If we try to make up the deficiency by means of ensilage or clover hay, our ration will become too bulky; while if we attempt to make it up with bran, the protein will be unduly increased. This would indicate that it is impossible to make a well balanced ration from the food stuffs selected, and the simplest way out of the difficulty would be to select some grain that is rich in carbohydrates and organic matter, with only a moderate amount of protein and fat. Looking over our list of food stuffs, we find that barley fulfils these conditions, while we might also slightly increase the amount of ensilage. We shall therefore add to our trial ration 2 lb. barley and 5 lb. ensilage.