accordingly. A good many clips of wool in this country are still sold by *character*, going year after year to the same buyers, who, having had them once or twice, will afterwards bid for those clips without seeing them—a very unlikely thing if selling wool with the dirt in it ever becomes the fashion.

The Bradford Chamber of Commerce, the most influential company of wool-buyers in the world, have recorded their opinion on the very point at issue. "What is wanted" they said, "is more care and attention to this part of his "business on the part of the British agriculturist; and as "the out-spoken opinion of this Chamber may be of service, "the committee appointed to report on the subject venture "to say that in this matter an amount of culpable slovenliness "prevails on the part of the farmer which in any other "branch of our national industry would not be tolerated." If the Bradford Chamber of Commerce have seen reason to alter their opinion since they reported to Earl CATHCART in the above terms, some few years ago, we shall be glad to have intimation of it.

Let us make sure that those who complain of not getting as much more price for washed wool as will pay for the work, and make up for loss of weight, really washed their sheep in the way they ought to have done. Was the wool really clean, or was it smudged by driving the wet sheep along some dusty road as they came from the washing pool, &c.? And was the necessary time allowed to elapse between washing and shearing for the yolk to rise again in the wool? The yolk comes from the skin, and not from the wool; and, therefore, if the yolk is up again before shearing the loss of weight of wool by washing, as asserted by some, is a pure fiction. That there is a loss in the weight of the fleece we do not deny; but it is only the dirt—the unmarketable commodity—that is gone. It is equally absurd to say that the washing can be done cheaper after the wool is off the sheep's back. Wool is never so well washed, and never with so little injury to the fibre as when it is washed on the sheep. The increased severity required to get dirty wool clean in the process of manufacture is injurious, and consequently reduces its value. Our flockmasters, we fancy, are cute enough to see that this reduction in value, if suffered at all, must fall upon them, and not upon the manufacturer, who can protect himself by paying a smaller price for the dirty wool. Nor do we believe that washing is injurious to the sheep, but the contrary, when done at the proper time. In the hope, however, that a discussion will follow the appearance of this article in our pages, we need not say more on the subject at present.

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COMPLETE FOODS.

Naturally, grass is a complete food for all herbivorous animals. Farm stock of all kinds will subsist upon grass when it is young and succulent. The common June grass of the Northern States, the Kentucky blue grass of the South, and the *Poa pratensis* of the botanists, is well known as the best pasture grass and as giving the enviable character which the best dairy regions possess for choice butter and cheese, and the best pasture localities claim for fine cattle, sheep and horses. This grass has the following composition.

COMPOSITION OF KENTUCKY BLUE GRASS HAY.

Water	14.30	Carbo-hydrates	44 96
Mineral matter	4.46	Proteine	11.54
Fat	4.24		
Nutritive ratio	1 to 4.8		

This is seen to be very nearly a perfect food, containing the nutritive elements in almost precisely the requisite proportion, which is one of proteine to 5 of carbohydrates. Some other excellent pasture grasses have the same comparative composition, as redtop, 1 to 5.4, and orchard grass, 1 to 6. When these grasses are fresh and in a growing condition their nutritive elements are more easily digestible than when they are dried and in the form of hay, because of the large quantity of water contained in fresh herbage and the soluble condition of the fibre at this period. For this season hay alone is found not to be a satisfactory food for cattle and horses, although this is probably due to the necessity for a larger ratio of carbonaceous elements is the cold weather, when the vital heat is heavily drawn upon.

But farmers cannot pasture all their stock in the summer or feed only hay in the winter. A large proportion of the feed must be made up of other fodder, as cornstalks, straw, etc., and these are far from being well-balanced foods. For instance, the following kinds of green and dry fodder commonly used are seen to vary considerably as to their nutritive ratio:

NUTRITIVE RATIO OF VARIOUS FODDERS.

Green fodder corn	1 to 9	Wheat straw	1 to 45
Green oats	1 to 7	Rye straw	1 to 46
Young clover	1 to 2.5	Oat straw	1 to 29
Green pea vines	1 to 3.5	Pea straw	1 to 12
		Dry corn stalks	1 to 34

These figures show the great difference which exists between green and dry fodders of the same kind, and also how incomplete the dried fodders are as food.

As it is necessary, however, for farmers to use these dry fodders, it is indispensable for them to preserve their stock in healthful condition by using some mixtures of other substances with the coarse feed. Without this addition cattle can merely subsist through the winter, as is the common case with cows which are fed upon straw and cornstalks alone, and come out in the spring barely able or even unable to stand, from weakness induced by the waste of muscle for want of sufficient nutriment to renew the constant exhaustion of it. A cow fed upon wheat straw gets but one pound of muscle-forming nutriment to 45 pounds of carbonaceous elements, and these go mostly to sustain the animal heat, and to procure this is obliged to consume nearly 150 pounds of the straw. This explains clearly why straw-fed animals fail so miserably in the spring after several months of partial starvation. Dry cornstalks are but little better than straw, and require rich supplementary food to make up for their defects.

What supplementary foods, then, are the best for making for making up an equivalent food which contains the right proportion of nutriment? Of these there is a large choice. Some of the most easily attainable are mentioned, with their nutritive ratio, as follows:

Rye, nutritive ratio	1 to 7
Oats, nutritive ratio	1 to 6
Corn, nutritive ratio	1 to 8 6
Peas, nutritive ratio	1 to 2 9
Wheat bran, nutritive ratio	1 to 5.6
Middlings, nutritive ratio	1 to 7
Starch waste, nutritive ratio	1 to 5.3
Brewers' grains, nutritive ratio	1 to 3 (1)
Linseed-oil meal, nutritive ratio	1 to 2
Linseed-oil, new process, nutritive ratio	1 to 1.4
Cotton-seed meal, nutritive ratio	1 to 1.8

(1) When dried at 212° F., I presume. A. R. J. F.