cereals we notice (1) that in albuminoids (the most important and valuable of all the constituents) oats stand higher than barley and lower than wheat, and (2) that oats are richer in fat than either of the last mentioned cereals. Experiments have shown them to have a very uniform digestibility, and experience has proved them to be the best food, in conjunction with a proper amount of bulky fodder, for working horses. These excellent qualities are no doubt largely due to the loose, mealy character of the ground grain, which allows the digestive fluids to act freely.

No. 2 Barley.

The more plump and better colored grades of barley must be considered too expensive for feeding, since they command a high price for malting purposes. It often happens, however, that unpropitious weather during harvesting, and other circumstances, cause a more or less shrivelled and badly colored grain. It may be found more economical to feed such grain than to sell it. The percentage of albuminoids in such barley is higher than in that of the best malting grades, and hence it is more valuable as a food. Speaking of barleys as a class, their albuminoids and fat are lower than in the other cereals. Barley does not contain as much hull as oats, hence its amount of fibre is much less, though still greater than that in wheat. Owing to this lack of hull principally, the practice of grinding barley and mixing it with cut clover is widely adopted. This gives greater bulk to the fodder and thus furnishes an increased surface of the concentrated portion of the feed to the solvent action of the digestive secretions.

No. 3 Red Fife Wheat.

This represents the average composition of Red Fife wheat from Manitoba, classed No. 1 hard. The high percentage of albuminoids and the small quantity of water point emphatically to the high feeding value of this grain. The unrivalled reputation which this wheat bears for flour production, naturally makes it too valuable to use as a cattle food.

Nos. 4 and 5. Frozen Red Fife Wheat.

It sometimes happens that early autumnal frosts in Manitoba and the North-West Territories deteriorate large quantities of wheat. This has hitherto been sold by the farmers at a great sacrifice, as the millers value it at an exceedingly low figure for their purposes. From experiments tried at the Central Experimental Farm, Ottawa, by Mr. Jas. W. Robertson, Agriculturist, it has been proved that frozen wheat may be used profitably for the fattening of swine, (See Bulletin 16). The analyses here given were made on the same wheats as used in those experiments, and are therefore of particular interest.

First, it will be noticed that frozen wheat contains more water than wheat properly and favorably matured. This is as might be expected, since the development of the frozen grain is arrested while it is yet more or less in the doughy state. The albuminoids, though somewhat lower, have not suffered materially, They still exceed the percentage found in soft fall wheats. Other and noticeable features are that the carbohydrates are 5 per cent. to 6 per cent. lower and that the fibres are somewhat higher in the frozen wheat, than in the No. 1 hard. Considered from the standpoint of composition, I think we may conclude that frozen wheat as a cattle food does not rank as much inferior to well ripened and mature grain.

No. 6. Pease.

Pease are characterized by a very high percentage of albuminoids, approaching one quarter of their weight. They are remarkably poor in fat, and possess less carbohydrates than the cereals. For these reasons, it becomes necessary to supplement them with some more bulky and less nitrogenous fodder, in order that a proper ratio of the various constituents may be maintained, the digestive fluids allowed to act freely, and the health of the animal not impaired.

Nos. 7, 8 and 9. Indian Corn.

These are the analyses of the grain of well known varieties. The merits of corn meal as a feeding stuff are widely recognized It produces much animal heat and possesses special value as a fattener. In the United States it is very extensively used for all classes of animals; over certain large areas it forms almost exclusively the "concentrated" fodder employed.

With the exception of malting barleys, corn ranks lower in albuminoids than the cereals, and possesses, according to our analyses, a larger percentage of water. In fat, however, it is richer.

Like other foods of a similar concentrated character, it should be fed in a ground condition, and be supplemented with more bulky food. It may here be noted that experiments have demonstrated that a greater proportion of a concentrated fodder is digested when the same is fed in a ground condition and mixed with cut hay or similar fodder, than when given whole and alone; and further, that the health of the animal is also the better maintained thereby.

No. 10. Wheat Bran.

According to the method of milling used, the composition of bran will vary within slight limits. The present analysis, however, may be considered an average one. It supports the general belief that bran has a high nutritive value. The percentage of albuminoids in bran exceeds that in the whole grain, owing to the gluten granules lying more particularly in the outer coat of the kernel. In fat also, it is richer than the whole wheat. It possesses a larger amount of fibre, as might be expected. Careful experiments have shown that in digestibility bran is equal to the grains; its use, therefore, rather than that of these more costly foods, must be considered economical. It has *special merits as a milk producer*, and is consequently fed with advantage to milking cows.

No. 11. Corn Bran.

This is a bye-product formed in the milling of Indian corn. Compared with wheat bran it is seen to be richer in fat, but considerably poorer in albuminoids. It is about equal to it as regards soluble carbo hydrates, but possesses somewhat more fibre.

No. 12. Rice Meal.

This sample was sent by a correspondent in Salt Spring Island, B.C., who says that the rice comes direct from China, and is ground at Victoria. He further adds that it is extensively used as a food for hogs and cattle in his neighborhood, owing to the very high price of oats, pease and other grains.

The whole grain—hull and kernel—is evidently ground, since the meal is of a yellowish color, and contains pieces of the husk. It is in a very satisfactory degree of fineness.

From the analysis, I should judge it to be a valuable food. Though it does not quite equal wheat bran in albuminoids, it is seen to contain a higher percentage of fat.

MANURES.

Very plainly worked out tables show the component parts and values of the various barnyerd manures, but amongst them that from the hen house finds no part. If Mr. Shutt in his next report could see his way clear to analyze and value this product he would be conferring a benefit on