able importance to the bread-maker, since, other things being equal, the drier the flour the greater the weight of bread that can be made from it.*

There is also another interesting deduction that can be made in this connection, though it is prebably not one of reat importance. The weight of the kernel in this series is in direct ratio to the ph moness of the grain. By comparing the moisture percentages with the data representing the weight of the kernel it will be observed that the heavier, or, in other words, the plumper, samples contain the larger percentages of moisture. Though the relation throughout the series is not regular, the results generally show that the lighter, and possibly more or less shrivelled, grain is the drier.

Crude Protein, – This is obtained by multiplying the total nitregen contained in the wheat by the factor 6'25. It is the most important constituent and in wheat consists almost, but not entirely, of gluten—the ingredient which determines the relative 'strength' of the flour and its value for bread-making purposes. Since, however, a part of the protein exists in the bran and in the neurone layer enclosing the endosperm and which may be separated with the bran, it does not invariably follow that the riches the grain in protein, the stronger the flour, although this is most probably true when comparing wheats of equal plumpness and with equal thickness of bran when milled alike.

The differences in protein-content to be observed between the grades of wheat from No. 1 Hard to No. 5 are very small and the writer doubts if he would be justified in making any deduction of an emphatic nature as to the relative superiority of any one of these grades over another as regards the strength of the flour which they would yield. There is certainly r_{\pm} indication in these erade protein results of a steady decline in strength from the first to the last of the series.

It is a significant fact, however, that the crade protein is perceptibly higher in No. 2 Feed and in No. 5 Frosted than in the grades preceding them, and the writter thinks that this may be accounted for in Ne. 2 Feed by the smallness of the grain, and hence the larger proportion of bran (which is highly nitrogenous) to endosperm, and in No. 5 Frosted by the shrivelled character of the grain.**

Hence, for grinding as cattle feed these two latter grades are in all probability the most valuable of the series, and following these we should place No. 5 and Feed.

Selected samples of Red Fife, as grown in Manitoba and the North-west Territories, have usually been found richer in protein than these wheats. Thus, in 1893, the writer obtained 14'62 per cent protein as the average for 9 samples grown in Manitoba and 14'53 per cent for a similar number from the North-west Territories. Undoubtedly the character of the season affects the character of the grain, especially as regards protein (gluten), and we may expect from year to year changes of more or less import, both in quantity and quality of this important constituent, but it is evident that the general and mixed character of grade samples should be borne in mind when comparing their analysis with pure, selected grain, or erroneous conclusions may be drawn.

Fat.—Here, also, the results are so uniform—the differences being such as might almost be necounted for in the unavoidable error of experiment—that it would not be safe to discriminate between the wheats, if we except No. 2 Feed and No. 5 Frosted, which, as in protein content, give slightly higher results than the other wheats of the series.

It may be of interest, however, to note that the percentages of fat throughout the whole series are considerably above the average usually quoted for wheats, viz., 1'85. Our former researches, which now include a large number of analyses, have always shown that wheats as grown in the Canadian North-west generally are so characterized and we must consider this as an important and valuable feature from the nutritive standpoint.

• These wheats were ground in February. The air in a heated building at Ottawa during the midwinter months is, as a rule, very dry, and this no doubt has had its influence u the molsture-content of the "theat. $f_1 = f_2 = f_1$

*• It has been shown by recent researches in the Experimental Farm laboratories that frosted and rusted grain are in a measure immature, and as a rule characterized by a higher protein-content than similar wheat that has become plump through maturing.