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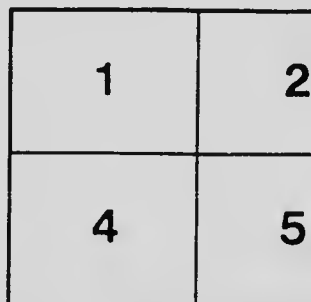
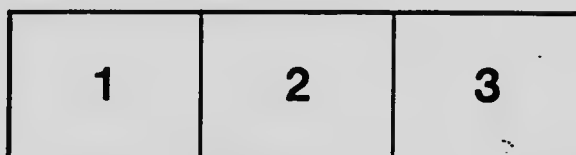
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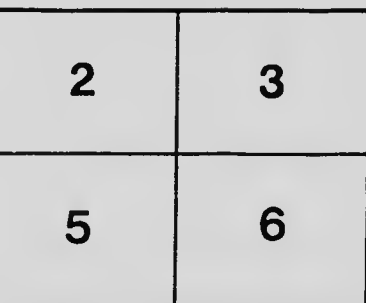
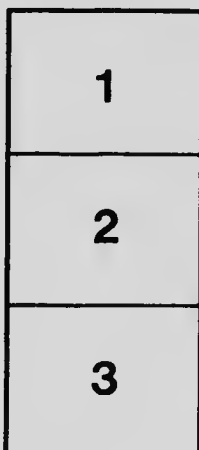
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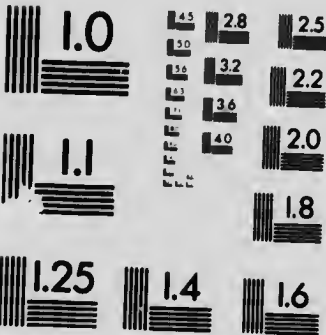
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PRESTON AND OTHER EARLY-RIPENING WHEATS.

BY CHAS. E. SAUNDERS, Ph.D.

In response to requests for precise information in regard to the characteristics and qualities of Preston and some other early wheats, the following brief summary of the principal facts has been prepared.

Preston is the best known of all the early wheats grown in Canada. It seems advisable, however, in discussing the subject, to consider at the same time the related varieties, Stanley, Huron and Percy. These four sorts have all been originated from crosses made at the Central Experimental Farm in the year 1888 and are of essentially the same parentage (Red Fife or White Fife crossed with Ladoga). As usually grown they are very much alike in most respects and are not distinguishable from each other after threshing. The kernels resemble Red Fife, but any competent judge can easily detect the difference between that variety and these others, provided all the samples consist of properly matured grain in pure condition. Mixtures of these wheats with Red Fife cannot be accurately separated by examination of the kernels.

The statement sometimes made that these early wheats resemble or are related to wheats of the durum or 'macaroni' or 'Goose' class is absurd. They belong to the Fife class and have no relationship or similarity to Goose wheat.

The distribution of these varieties from the Experimental Farms was begun many years ago, before the characteristics of each sort had been fully fixed by selection; and hence it is now usually possible in an ordinary field of any of these wheats to find heads or kernels of more than one type. In order to overcome this objection, to improve the varieties as much as possible, and especially to get rid of the kernels with a yellow skin (which under the present Grain Inspection Act are considered inferior) a careful re-selection of these wheats was undertaken a few years ago, with the result that improved strains were produced. Some of these are now being distributed, and those of the very best quality (of which only a small amount of seed is yet available) are being propagated as rapidly as possible. A full description of each variety need not be given here; but it may be mentioned that selected Preston is a bearded wheat with yellowish ('white') chaff; Huron, bearded with reddish chaff; Stanley, beardless with reddish chaff, and Percy, beardless with yellowish chaff.

When questions are asked in regard to these wheats the answers are usually desired in the form of a comparison with Red Fife. This method, therefore, seems the best to adopt in considering the various points here discussed.

Earliness.—These varieties usually ripen from about four to twelve days before Red Fife, if sown on the same day and grown under exactly the same conditions. In the Northwest Provinces, Preston on summer-fallow will usually ripen at about the same time as Red Fife on stubble. Hot weather towards harvest reduces the difference in time of ripening. Cool weather lengthens it.

Stiffness and length of straw. Resistance to Rust, Smut and other Diseases.—In regard to these points the early varieties show no striking differences from Red Fife.

Yield.—Experiments in regard to yield often give contradictory results under some conditions. Speaking generally, however, one may expect a large yield from any of these wheats, often larger than that from Red Fife. On the whole perhaps the bearded varieties (Preston and Huron) are rather more productive than the others. It must be remembered that these comparisons are generally made under conditions favourable to Red Fife. In cases where frost has to be considered the early varieties usually give distinctly heavier yields than Red Fife.

Appearance of Grain, Grade, Selling Price.—These early wheats are as hard as Red Fife and, when the kernels with yellow skins are eliminated, are of a rich reddish colour which is (if any difference be seen) rather darker than Red Fife. So long, therefore, as the Grain Inspection Act requires the higher grades to contain certain proportions of hard, red wheat of the Fife class, these varieties should grade quite as high as pure Red Fife. The grade, of course, largely controls the sale price in Canada.

The opinion of an English expert in regard to samples of Red Fife, Preston, Stanley and Percy, grown at Indian Head, Sask., in 1902, was that the Stanley and Percy would sell in London at the same price as the Red Fife, but the Preston would command about three-quarters of a cent a bushel less. Of the same varieties grown at Ottawa he believed the Percy and Red Fife would bring equal prices and the Preston and Stanley about three-quarters of a cent a bushel less.

Milling Value.—In their conduct in the flour mill these four wheats closely resemble Red Fife. The bran separates readily, the proportion of middlings produced is large and the middlings are not unusually difficult to reduce. This means a high yield of 'patent' flour. The total yield of flour is very good and not much 'break' flour is produced. These facts are stated as the outcome of twenty milling tests of samples of pure Red Fife and twenty-three tests of samples of the four earlier wheats, all the tests having been carried out during the past few years by the writer, personally.

Colour of Flour.—Preston and these other wheats have, like Red Fife, the disadvantage of producing flour not pale enough for the popular taste. Indeed, as now generally grown they yield flour of a deeper yellowish colour than that made from Red Fife. Some millers find it advisable to artificially bleach Red Fife flour; and such treatment would be necessary with Preston if it were desired to bring it to a very pale shade of colour. The colour of the flour produced from the best selected strains of these wheats shows a great improvement in some cases over that made from the ordinary samples. Flour from the best selection of Stanley (Stanley A) is of the same colour as from Red Fife. The best Preston, Huron and Percy have also been improved, but not quite to the same extent.

Baking Strength.—It has sometimes been suggested that a comparative baking test should be made to settle once for all the relative merits of these wheats. It is very easy to draw precise conclusions from a single test, but unfortunately such conclusions are usually wrong. During the past few years the writer has baked flour from thirty-eight samples of these five wheats, having made 170 test loaves. This amount of work enables one to draw certain conclusions but by no means answers all the questions that naturally arise. The chief general conclusions may be here stated. As a rule Red Fife gives flour distinctly higher in baking strength than these other wheats, provided the samples compared have been grown under similar conditions and properly ripened. Even when the conditions have not been alike the Red Fife usually gives the stronger flour. In some cases, however, one or other of the early wheats has the advantage. By 'strength' is meant the ability of the flour to absorb water and to produce a large, light loaf of fine texture and good shape. On a scale of points for strength where 75 indicates *weak*, 85 *medium* and 95 or more *very strong*, Red Fife has varied from 84 to 102 and the other wheats from 69 to 93, the Red Fife being usually about 10 or 12 points ahead. This indicates a considerable difference in favour of Red Fife in this important matter, the 'strength' of the wheat from the Manitoba Inspection Division being one of the chief factors in maintaining its high price in England. The most desirable strength for any flour is a matter of taste, if the flour

is to be used in pure condition. The strongest flours do not necessarily make the best bread. For mixing purposes, however, the strongest wheats or flours usually (not always) command the highest price; and while in England all kinds of clean wheat are readily saleable, the demand for really strong wheat is generally very great. With all due respect to the views of anyone who judges by appearance only, I am of the opinion that if their relative qualities were clearly understood the difference in price between pure Red Fife and these other wheats on the London market would usually be considerably more than three-quarters of a cent a bushel. It must be remembered, however, that the ordinary western graded wheat is by no means pure Red Fife, though consisting chiefly of that variety.

Conclusion.—In spite of their many admirable qualities, I cannot recommend these four early wheats for the purpose of replacing Red Fife, as a variety for export purposes, in those districts where early autumn frosts are not feared. Wherever, in the western prairie provinces, Red Fife can be depended upon it should be the main wheat sown, these earlier sorts, if used at all, being sown in relatively small quantities merely to make possible a somewhat earlier commencement of the harvest.

In those districts where Red Fife does not usually escape frost these early wheats (particularly Stanley, Preston and Huron) should be tried. In many cases they will no doubt prove of immense value. They are the only suitable varieties available at present for such districts, except Pringle's Champlain, a bearded wheat of similar parentage and character, which can also be recommended.

Farmers in localities where a fair degree of success is obtained with Red Fife but where it is occasionally touched with frost must use their own judgment to decide, from the foregoing statements of fact, to what extent they should use these earlier wheats.

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Cerealist.

CENTRAL EXPERIMENTAL FARM,
OTTAWA, March 20th, 1908.



