experimental plots on all the Experimental Farms for a period of nine years, the Preston has given a crop of 34 bushels 41 lbs. per acre, while the Red Fife has given 33 bushels 7 lbs. per acre, a difference of 1 bushel 34 lbs. in favour of the Preston. The Preston has also ripened uniformly earlier, the gain in time of ripening varying from four to six days.

The Stanley is a twin wheat with the Preston, both having had origin in the one kernel. The plant grown from the cross-bred kernel the first season produced heads which were uniformly bearded; but when the seed from this was sown the year following, some plants produced bearded heads and others beardless. Subsequently these two varieties were bred to type by discarding all the variations produced until the types became fixed. Stanley during a nine years' test has given an average crop of 32 bushels 2 lbs. per acre, which is I bushel 5 lbs. less than Red Fife for the same period. In earliness of ripening this variety is about the same as the Preston.

The White Fife, which has averaged 8 lbs. per acre more than Red Fife, during a nine years' trial, is grown to a considerable extent in some parts of Manitoba and the Northwest Territories; but, although highly esteemed by some, it is not held to be equal in quality to the Red Fife. This variety was also crossed with the Ladoga, and the best results obtained were Huron and Percy. Huron is a bearded variety which has also proven productive and early. During a nine years' test it has given a slightly larger crop than Red Fife, exceeding that variety by 4 lbs. per acre. It has also matured from four to five days earlier. Percy has given an average crop during the time years' trial of 31 bushels 30 lbs. per acre, which is I bush. 37 lbs. per acre less than Red Fife for the same time. This also ripens earlier than Red Fife by from four to five days.

Another variety, known as Early Riga, was obtained by crossing one of the East Indian wheats, named Gehun, brought from a high elevation

in the Himalayas, 11,000 feet, with a Russian wheat known as Onega. The Onega was brought from near Archangel, one of the most northerly wheat-growing districts in Russia. These were both early varieties, but were not very productive. The early Riga was the best sort produced from this cross, and has proved to be one of the earliest ripening wheats known. During the five years it has been under trial it has ripened on an average from eight to nine days earlier than Red It has also proved fairly pro-Fife. ductive, having given an average crop for five years at all the Experimental Farms of 31 bushels 2 lbs. per acre, being 4 bushels 23 lbs. less than Red Fife for the same period.

A COMPARISON

The next point to consider is the quality of these cross-bred wheats and how they compare with Red Fife. To gain information on this point, three lots of samples were put up, consisting of two of Red Fife carefully cleaned and of the very best quality, with two each of Preston, Stanley and Percy. One of these was grown at Ottawa, Ont.; the other at Indian Head, N.W.T. One lot of samples was submitted to Mr. Julicher, the well-known wheat expert of the Pillsbury-Washburn Flour Mills Co. of Minneapolis, Minn, A second lot was sent to Lord Strathcona, High Commissioner for Canada, London, England, with a request that they be submitted to one of the best English wheat experts. The third lot was handed to the Chemist of the Experimental Farms, Mr. F. T. Shutt, for analysis. The samples sent to Lord Strathcona, were referred by him to Mr. Wm. Halliwell, technical editor of The Miller, who is regarded as one of the most competent authorities in England. He is said to have had twenty-five years' experience in practical flour milling and wheat buying. These samples were all sent under numbers, and no information was given as to their names.

The reports of the experts on these wheats show that they were all of good