

tinues, "covers so large a field that it is impossible to present in a limited space anything like a complete report. We shall, however, refer to some of the important lines of investigation." He then aminadverts to their efforts in "Maintaining the fertility of the soil, the adoption of a judicious system of rotation of crops, following the best methods of preparing the land, the selection of plump and well-ripened seed, early sowing, and choosing the best and most productive varieties. Along all these lines many experiments have been conducted, under the different climatic influences which prevail where the several experimental farms have been located. Continued efforts have been made to gain knowledge as to the best methods of maintaining and adding to the fertility of the land."

After detailing to some considerable extent the work accomplished under these heads, he refers to what has been done in improving the seed grain of Canada by the introduction of promising varieties grown in other countries, by the improvement of existing sorts by judicious selection, and by the production of new varieties by cross-fertilization and subsequent selection of the most promising types.

Our Thomas, the reader will remember, had asked us to name the single new variety of grain originated in Canada by those specialists, and we couldn't bring our memory into range, no matter how sure we were of our ground. The Principal doesn't, however, make any such claim in the Interim Report. But let him speak for himself:

"The third method referred to by which improvement has been made in the grain grown in Canada is by cross-fertilizing of different varieties. This has already produced very useful results, and the prospect of further improvement from this line of work is most hopeful and encouraging. The natural variations which occur in varieties, and which may be maintained by careful selection, are, for the most part, bounded by narrow limits; but in cross-fertilizing, the outlook for variations of a much wider character is practically unlimited, and the number of distinct varieties which may be bred from a single cross is sometimes startling. Many of these, after careful testing, are found to be lacking in some particular quality desired, or are inferior in quality to the parents from which they were produced. All such are promptly discarded, especially those inferior in quality, since quality is most important, and must be maintained. Others of promise have been retained for further trial, and the aim in all this work is to produce cereals equal in quality and productiveness with the best varieties now in cultivation, and earlier in ripening. It is also desired to have these good qualities combined with stiffness of straw and more or less immunity from rust. Varieties have already been produced superior in some of these particulars, but not in all. Some of the cross-bred wheats in a ten-years' trial have proved more productive than Red Fife, and have ripened a week earlier. Other varieties have a higher proportion of proteids, and hence would probably be more nutritive. A variety has been produced with nearly fifty per cent. more protein than Red Fife. Others have been obtained which ripened two to three weeks earlier than Red Fife. In most cases extreme earliness has been associated with a somewhat lessened crop. Indeed, it is only reasonable that such should be the case. Where a grain has such an early ripening tendency, it is hurried along by the forces of nature so rapidly that it has not time to store in the fast-ripening head kernels so plump as in the case of a slower-ripening sort, and it is not unlikely that it may be exceedingly difficult, if not impossible, to combine all these good qualities in the highest degree in any single variety, but the interests involved are so great that the possibility of its attainment should prove a stimulus to unceasing work in this direction."

So it would appear that we have thus far originated little worth while that is distinctively Canadian in the grain line; nothing which we can claim as a pure and simple contribution to the biological science of the country. This goal is still before us.

The other results in the special lines of experimental agriculture followed, we must refer to in a subsequent letter, in order to hold the scales fairly between the parties. A. E. BURKE.

HORSES.

POINTS OF THE CLYDESDALE.

It is not easy to find language which will adequately convey an idea of the present standard of points in the Clydesdale, mainly because the terms employed are of necessity relative, and have different shades of meaning, according to the example of the breed, present to the mind's eye of the writer or reader.



Chibiabar.

Thoroughbred stallion. A King's Premium winner.

The old school of Clydesdale judges—that is, the school of thirty-five years ago—began to judge at the head, travelled over the back and quarters, finishing up with the limbs and feet. The new school, which began to assert itself say about fifteen years ago, begin with the feet—"no foot, no horse"—and travel upwards. We follow their example. The ideal Clydesdale horse of modern days has large, round, open feet, with particularly wide coronets, and the heels are also wide and clearly defined. His pasterns are long, and set back at an angle which would be considered too

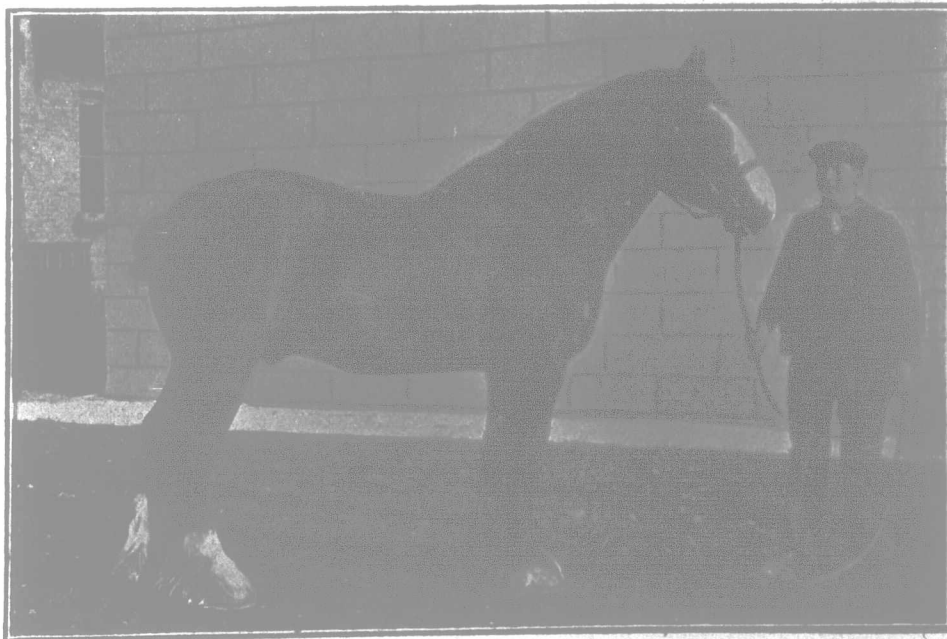
desdale is regarded as unpardonable. The Clydesdale has an oblique shoulder, lying well back on high withers. A ewe neck—that is, a neck which carries the crown of the head at about the same level as the top of the shoulders—is not regarded with favor, and an arching, high neck, whether in male or female, is always an attraction. The head should be of medium length, and broad between the eyes and at the muzzle. A tendency to "dish-face" may be observed in some tribes, and this is generally accompanied by a small ear, and what, in the main, is characterized as a "pony head." Wherever this

style predominates, there is probably a strain of Highland or old Galloway in the blood. On the other hand, the hard, narrow face and Roman nose are regarded as equally, if not more, objectionable. Such features are usually indicative of a strain of Shire blood, and, indeed, they are not otherwise to be accounted for in the Clydesdale. An open, level countenance, vigorous eye, and large ear, are greatly valued, and not readily sacrificed. The hard limbs of the Clydesdale have not nearly so much attention paid to them as the fore legs—and in this, we think, Clydesdale judges err. Especially in regard to entire horses, it is true that no part of their anatomy should be more carefully attended to, and broad bones, of the texture indicated as essential in the fore legs; broad, clean, sharply-defined hocks, with the hams coming well down into the thighs, and the latter maintaining their strength and muscular development right down, almost to the hocks, should be insisted on than they are. The truth is that we are disposed to regard weakness in the

thighs as the most undesirable blemish on the Clydesdale at the present day. If Prince of Wales 678 gave us rather more of the hard, narrow head, with Roman nose, and the straight hock, than was desirable, Darnley 222 gave us too great a lack of muscular development in the thighs, and rather a sudden droop in the quarters. Thoroughbred quarters are not asked for in the Clydesdale, but, on the other hand, neither are the quarters of the Percheron. The tail should be well set on, by which we mean that it should be well set up, and the quarters and thighs should not be too sharply marked off.

Action is all-important in the Clydesdale. Even his most severe critic will not deny that in this particular he generally excels. He is never judged travelling round about the ring, but always up and down the center in front of his judges. Hence his limbs must be squarely planted under him; they must follow each other in an undeviating line, and it is an all-important requisite that the points of the hocks be inclined inward and not outward. A Clydesdale must stand with his hind legs in regulation military form—heels in and toes out. Any other arrangement is tabooed, and if perfection is not always attained, it is always sought for, and many things are sacrificed to secure the prize for

an animal which keeps its hocks well together. The consequence of the attention bestowed on action is that the Clydesdale, as a rule, is both a good walker and a good trotter. Some of the best show horses have had trotting action almost equal to that of the best Hackneys, while there probably never was a stallion of any breed which could have excelled Darnley at the walking pace. The chief improvements effected in the Clydesdale during the recent years are, in our opinion, these: An increase in the quality, by which we mean the



Celtic Prince (imp.) [5313] (12901).

Clydesdale stallion, black; foaled May, 1904. Sire Everlasting (11331), by Baron's Pride; dam Flora McDonald, by Hiawatha; grandam Sunflower, by Prince of Wales (673). Winner of 1st at Ottawa, 1905; 2nd at Toronto, February, 1906; 2nd at London, 1906. Owned by A. F. O'Neil, Maple Lodge, Ont.

acute in the Shire. His bones are wide, flat, thin and dense.

In approaching one, the ideal Clydesdale should carry both feet absolutely straight and level. He has a wide chest and low counter, but his limbs are planted well under him, and there is no tendency to what is called being wide at the shoulder—that is, having the fore limbs so coming out of the shoulder that the horse is compelled to walk in front somewhat after the fashion of a bulldog. The slightest inclination to this in a Cly-