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THE FARMER'S ADVOCATE.

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T. J. Carwardine, Stocktonbury, founded a herd in 1863 by the purchase of cows and heifers by Sir Thomas (2228). Many of the good bulls of the time were used in this herd, and some were bred on the place. The chief individual in this herd, about which our interest centres, is the bull Anxiety, by Longhorns. Anxiety was imported to America by Culbertson, of Illinois, and proved to be one of the most prepotent bulls ever introduced into the United States, but he died too young to be of the most use to the breeders of that country. Anxiety 4th, by Anxiety, made the herd of Gudgell & Simpson, of Missouri, who championed the Anxiety blood in America before its virtues were appreciated, and who eventually disseminated throughout North America so much Anxiety blood that traces of it are now to be found in almost every herd. The most noteworthy sire in the Stocktonbury herd, so far as English cattle are concerned, was Lord Wilton. He was knocked down at the dispersion sale to Mr. Vaughan, to go to America, at 3,800 guineas (approximately \$19,000), but he was never settled for and was sold again.

Among the important Hereford bulls which influenced the type and character of the breed to a considerable degree in England during the past century were: Sovereign (404), Old Wellington (507), Old Silver (540), Waxy (403), Cotmore (376), Lottery (410), Chance (348), Sir David (349), Walford (871), Sir Benjamin (1387), Sir Thomas (2228), Horace (3877), Winter de Cote (4253), and Lord Wilton (4740).

Herefords in America.

Hereford history in America has been made chiefly in the United States, and there the Anxiety cattle have been crowned with a great measure of success. In 1817 four head, one dying in transit, were imported to Kentucky. In 1825 a male and female were donated to the Massachusetts Society for the promotion of agriculture. In 1840 twenty-one cows and heifers and a two-year-old bull were brought to Albany, N.Y., by W. H. Southam and Erastus Corning Jr. During 1840, 1843, 1852 and 1855 other importations were made into the Eastern States, but neither the Kentucky, Massachusetts nor the New York introductions rose to eminence. In 1875 T. L. Miller, of Beecher, Ill., a man of wealth and influence, became interested in Herefords and did much to popularize the breed and impress its merits upon the people of the Western country. He showed at the fairs and demonstrated the adaptability of his cattle to the ranches of the West. Other people became interested and ultimately successful breeders; among these may be mentioned: C. M. Culbertson, of Illinois, and Earl, Fowler and Van Natta, of Indiana. Following these came Clark, Henry, Morgan and Leigh, of Illinois; Southam, Gudgell & Simpson, Harris and Funkhouser, of Missouri; Stannard, of Kansas; Hooker, of Ohio; Stuart, Nave and Graves, of Indiana; Curtis and Giltner, of Kentucky. Thos. Clark, of Illinois, who judged the Herefords at the Canadian National Exhibition at Toronto in 1916, is one of the pioneers, and reputed to be the oldest active breeder of pure-bred cattle in America at the present time. He was a persistent advocate of the Anxiety blood in those early days, but his bull was only a great heifer getter and thus failed to make as much impression on the breed as it otherwise would have done. To Gudgell & Simpson is due the credit for raising the Anxiety Herefords to the dominating position they attained in the United States; Anxiety 4th was the bull that made their herd. At the celebrated Shadeland Farm, in Indiana, Adams Earl was achieving excellent things with Lord Wilton blood, having imported three of his good sons, viz., Sir Bartle Frere, Romeo and Prince Edward, the former being the most successful sire. Garfield, a Royal winner, was imported to cross on the Lord Wilton females, and The Grove 3rd, a famous bull, was purchased, at eleven years of age, from Mr. Culbertson at \$1,400. Other celebrated sires of early Hereford times in the United States were Archibald, Rudolph, Success, Winter De Cote and Tregrehan. There was keen rivalry between the respective owners of these noted bulls, and each sought to make his favorite strain the leading factor in the Hereford breeding fraternity.

In 1860 the late F. W. Stone, of Guelph, Ont., made an importation from England, and for several years did much to arouse enthusiasm in Hereford breeding in Canada. Prof. Brown, of the Agricultural College, Guelph, made an importation in 1884 including the bull Conqueror, 7510, purchased from her late Majesty Queen Victoria, at 500 guineas or approximately \$2,500. Conqueror was bred by Carwardine at Stocktonbury and was by Lord Wilton. A few excellent heifers were included in this shipment. The breed's interests were promoted, to a large extent in the Dominion, by the late Hon. M. H. Cochrane, Hillhurst, Quebec. In September of 1885 his herd numbered over 100 head, of which 80 were cows, heifers and heifer calves. Ten of these females imported in 1883 were by the famous Lord Wilton. The cross of Cassio, by the eminent sire, The Grove 3rd, on Lord Wilton heifers proved a very successful one. A herd at Port Cardinal, Ont., owned by Mr. Benson, was founded in 1880. Rambler 6th by Chieftain 4427 here proved a successful and prolific sire.

Again looking up the thread of history in the United States, it might be said here that Anxiety 4th, through an intensification of his blood in his offspring, improved the rumps and thighs of the Hereford, as it was being imported from England at that time. His greatest son was Don Carlos which, mated with North Pole heifers, produced some of the best bulls of their time, viz., Beau Brummel, Lamplighter, Druid, Andrew, and Western Eagle. Beau Monde and Beau Real were two Anxiety 4th bulls which sold at auction in 1884 at \$1,000 and \$300 respectively. The latter developed into an invincible show bull and getter of champions. Prime Lad,

a famous champion and prepotent sire, was by Kansas Lad Jr., a grandson of Beau Real. Distributor, the sire of Harris' high priced and celebrated Repeaters, was by an Anxiety bull, Disturber and out of Elfin Lass by Kansas Lad Jr. Similar blood is found in Standard, doing service in the herd of Cyrus A. Tow. Standard is by Bonnie Brae 8th, an intensely-bred Anxiety bull, and out of a granddaughter of Kansas Lad Jr. The Prime Lads came from a cross of Kansas Lad on a daughter of The Grove 3rd.

Much interest at the present time centres around the Perfection Fairfax strain. The celebrated Dale was bred by Clem Grover, of Indiana, and was full of the blood of the famous Shadeland herd, owned by Adams Earl. His sire was Mr. Clark's Peerless Wilton. Perfection was a son of Dale, and a more popular champion than his sire. After passing through several hands he reached the herd of Gilbert N. Hoxie at the high auction price of \$9,000 and here he sired Perfection Fairfax, Warren T. McCray's "King of Hereford sires," shown on the adjoining page, in field condition at 13 years of age. One hundred and fifty of his sons and daughters sold for \$150,000. This bull cost his present owner \$5,000. Perfection Fairfax, crossed on Anxiety females, has wrought wonders. Superior Fairfax, the \$10,000 bull at McCray's sale in May, 1916, was from a dam by the Anxiety bull Beau Donald 33rd, a son of Beau Donald.

This brings us up to the present time. Now, a few words more about the breed.

America's Type.

There is considerable controversy, at times, arising out of the claim Americans put forward that they have improved the breed. The early English Herefords were exceedingly large, but coarse in the rump and weak in the thigh. Old Country breeders claimed that the most expensive cuts of meat were to be found on the back and loin, and there their cattle were superior. The grasses, feeds and climate of Britain appeared conducive to great scale, but the American-bred Herefords have been reduced somewhat and improved behind. Importations are not so large or so necessary in these times, but the consensus of opinion is that the happy medium should be aimed at and cattle, most consistent with the demands of this country and the markets, produced by those constructive breeders who mold type for the present and future generations.

Commercial Fertilizers and Canadian Agriculture.

Recently, in Ottawa, before the Commission of Conservation, Frank T. Shutt, D. Sc., Dominion Chemist, gave a very comprehensive paper on the question of commercial fertilizers and their place in the agriculture of Canada at the present time. Space will not permit of a reproduction of the paper in its entirety, but we shall attempt to abridge it, setting forth the salient points for the benefit of our readers who are interested in the question of soil fertility and the production of farm crops.

Owing to the fact that the use of fertilizers of this kind to-day is restricted to certain areas devoted to potatoes, sugar beets, tobacco, market garden, or other "money" crops, and, further, that experiments conducted by the Experimental Farm System in this connection, and from which reliable conclusions might be drawn, have been carried on at a comparatively small number of points in the Dominion and over a comparatively short period of time, Dr. Shutt wished it understood that the results were more or less tentative in character. He did not wish to be considered at all dogmatic as to the results obtained, and expressed himself as extremely cautious in the matter of prophecies for the future. This much, however, he would say without hesitation, that, small as our use of fertilizers is, that use is steadily, though certainly slowly, on the increase, and further, "I have no doubt that with the adoption of more intensive methods which will follow as our country becomes more thickly settled, and with better, steadier markets at home and abroad established for farm produce, this use will more and more increase. The indications are certainly all in this direction. I wish, however, to say in this connection that, anxious as I am in these days of stress to do all that may be in my power towards greater production on our farms, I do not think it would be wise to advocate throughout the length and breadth of the land the general and indiscriminate use of fertilizers on all soils and for all farm crops. While we are anxious that our yields should reach the highest possible profitable limit, I have no grounds for preaching the doctrine that this can be effected simply by the application of fertilizer, as is the opinion of some. Fertilizers have a place in a rational scheme of farming, but it is most desirable that our farmers should first clearly understand what that place is, if our land is to improve rather than deteriorate and if financial loss from the purchase of fertilizers is to be avoided. We must first have sound education, the outcome of science and practice, on the principles involved in the up-keep of soil fertility, on the composition, value, care and application of farm manures, on the desirability of more live stock on our farms, and the greater consumption on the farm of the land's produce, on the importance of rotation and especially the value of clover and other legumes in the rotation for maintaining the humus and nitrogen of the soil, on the proper working of the land and the preparation of a good seed-bed. When all these matters

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Progress in British Agriculture.

EDITOR "THE FARMER'S ADVOCATE":

Every week passed under the new rule of the present Lloyd-George Government in Britain tends for progressive movements, on far-reaching lines, in the matter of agriculture and live stock. I recently recorded that Mr. Prothero, the newly chosen Minister of Agriculture, had fixed a price for the 1917 wheat crop at sixty shillings per quarter of 504 pounds. Now, he has just told us that the Government has agreed that the price of oats (1917 crop) shall be 38 shillings and sixpence per quarter of 336 pounds, and potatoes (main crop) in quantities of not less than six tons, free on rail, or free on board, £5 15s. a ton for delivery from September 15 to January 31; £6 a ton for delivery in February and March; and £6 10s. a ton for the remainder of the season. Mr. Prothero has defined a scheme for proper cultivation of the land. Britain is to be divided into sections, and War Agricultural Committees are to take control and watch the farming done. If any farmers shall be found to be "doing" their land badly, i. e., if they be proved to be bad farmers, the War Committee can seize their land and put someone on to it who will farm it properly—drastic but necessary measures. Motor ploughing is to be encouraged, and soldiers with experience released from their army work to tackle ploughing at a critical time in the spring.

We are certainly in for a great revival in agriculture in Britain (as I have said in previous letters) and Mr. Prothero has made lots of friends. The next thing for him to do is to tackle the live stock continued improvement scheme and take it in hand as a real national question, and not leave so much to private enterprise.

True, British live stock has thrived mainly because rich men have dipped into their pockets and paid the piper, but when the war is over a new stamp of farmer and breeder will fill their places, and state encouragement on an elaborate plan will be necessary. Our home breeding problems are still considerable nuts to crack, but Mr. Prothero should effect even that job.

ALBION.

are carefully understood and practiced then and not before may we with advantage, in general farming, advocate the judicious employment of fertilizers. Fertilizers are no panacea to remedy the evils of poor farming. They cannot be depended on solely to give profitable yields, to leave the land richer for posterity than when first broken or entered upon, and that is what we ought to aim at, for our native, fertile soils are a great and important national asset and inheritance. Our experience has shown that fertilizers cannot profitably be used as substitutes for manure, for the growing of clover, for good soil management, but that their role is rather supplemental to all these rational means for the up-keep of soil fertility."

Factors Limiting Production.

Some of the limiting factors to crop growth other than the presence of available plant food were enumerated as follows: First, there is the nature and physical condition of the soil; its capacity for holding moisture dependent upon its texture and its humus content, in other words, its power to withstand drought, its degree of aeration, its drainage, and all those qualities of a physical character which make for the easier development of the root system. Second, the character of the season, by which is meant the amount and distribution of rain, temperature, hours of sunshine, etc., and so far as can be seen to-day seasonal conditions are the most potent of all determinative factors in crop yields. Lastly, there is the inherited capacity for growth and reproduction in the crop sown. All these with some others are limiting factors that cannot be overlooked. In elaborating on these remarks, Dr. Shutt explained how impossible it would be for fertilizers to play their part in nourishing the crops on heavy, undrained clays, on light soils which readily dry up with a few days' drought, owing to a lack of humus or want of surface cultivation, for plants take their food from the soil in the form of solution. Again, if a crop is sown which has a maximum yielding capacity of 40 bushels per acre, fertilizers cannot make it yield 60 bushels by simply feeding it.

Soil, Climate and Fertility.

As might be expected there are, within the domains of the Dominion, soils of many types and classes, ranging from the most fertile to be found anywhere in the world to those so poor and thin as to be practically worthless for ordinary farm purposes, and which should be reserved for forests. Provinces differ as to the character of their soils, and this is one factor in determining what might be termed the Provincial consumption of fertilizers. Other factors to this end will be density of rural population, character of farming, proximity of markets for concentrated products, etc. It is not simply a case of relative poverty of soil, as might be at first sight supposed, that determines fertilizer consumption. It is, as is well known, in the Provinces of