

Progress of Agriculture in the Victorian Era.

A RETROSPECT.

The advancement of agriculture in the last sixty years, while very considerable and comparing favorably with that of any corresponding period previously in the history of Great Britain or the other European countries, and on the American Continent showing remarkable expansion, yet on the whole, considering the wonderful strides made during the same period in the arts and sciences as applied to other lines of industry, such as seen in the use of steam and electricity, the progress made in agriculture, the oldest and the least subject to changes of all our industries, has perhaps not been so striking to a casual observer as might be expected. In regard to many of the newer industries it may be justly said that they have made brilliant progress; but if agriculture cannot claim so great a splendor as these, yet its claims to notice in the review of the history of the record reign deserve and will repay most careful consideration. Agriculture retains its feature of distinctive individualism, unlike the machine-like system of vast modern industrial concerns. Change with the farmer is a work of education, and therefore gradual. Great advances there have been in agricultural knowledge, and a more general adoption of better methods. Witness the applications of the germ theory, entomology, cross fertilization, the growth of nitrogen-gathering plants, manuring, centrifugal cream separation, etc.

During the past half-century we find, first, the gradual growth of a more intensive system of farming in the older sections, with expansion elsewhere; second, the phenomenal development of transportation; and third, the application of scientific investigation to agriculture. Contemporaneous with Queen Victoria's reign we note the splendid experimental and kindred work conducted privately at Rothamstead by Lawes and Gilbert (at once pioneers and peers), followed by the remarkable extension of experimental stations in the United States and Canada, and the growth of agricultural schools and colleges. American experimental agriculture has been going through a "boom" period characteristic of the Western continent, and, as yet, the results have hardly been commensurate with the public expenditure involved consequent upon an undue straining after immediate "effects."

The evidences show that at the advent of the Queen's reign agricultural progress in Great Britain and the world over was at a low ebb. There had been during the latter part of the eighteenth century a period when the industry had shown vigorous enterprise and improvement. The genius, skill and enterprise of such men as Bakewell, the Collings brothers, and other eminent breeders brought about a genuine revolution in the improvement of live stock, and had shown an intelligent skill in the art of breeding which has probably never been surpassed, if it has indeed been equalled, by any set of men in the years which have intervened. The period of the great Napoleonic war of 1812-15, while it brought with it exceptionally high prices for wheat, and the general inflation of values which always accompanies a boom, was followed by a corresponding depression from which agriculture took a long time to recover. The same experience was repeated during the years of the Crimean war, 1854-6, when the price of wheat reached abnormal figures (as high as \$2 a bushel), creating a boom in farm lands in Canada (\$100 an acre being paid in many cases), which led many farmers into wild speculations in property which proved disastrous when the inevitable reaction came, and a period of severe depression followed, involving financial ruin to many who had been accounted wealthy.

England's Trade Policy.—Up to the time of the repeal of the Corn Laws in 1846, under which an import duty was imposed on foreign grain and cattle, the British farmer enjoyed substantial protection from foreign competition in the markets of that country, with the result that although prices fluctuated then as now, the average price of wheat in 1812 had reached the phenomenal figure of \$4 a bushel for the year. In the following year it was \$2.75. These would seem to have been halcyon days for the English farmer, but the evidences are that even under such apparently favorable circumstances, his innate disposition to grumble was as freely indulged as it is to-day. We quote from an agricultural publication of 1814, in which, in an appeal to Parliament for more favorable tariff regulations,

it was complained that "on account of the very great expense attending the cultivation of numerous clays and poor lands in this kingdom it would be impossible to continue their cultivation for corn at the present low prices for corn produce." It was about the time of the accession of the Queen that the agitation for the repeal of the Corn Laws was commenced. England was then fast becoming, as a result of her rapidly increasing population, more and more a manufacturing and less in proportion an agricultural country, and the adoption by Parliament in 1846 of Sir Robert Peel's famous free trade measure abolishing the duty on corn, while it was exceedingly distasteful to the farming classes, marked the dawn of a brighter day for the artisan and laboring classes, practically opening the ports to the free entry of food supplies, thus bringing within reach of thousands of the people many comforts which they were formerly denied. Sir Robert Peel in stating his financial proposals to Parliament in 1846 explained that his object was to apply the principles of free trade throughout, though as a matter of fact it was left to his successor in office to carry that policy into effect in its entirety. The British farmer of to-day, feeling keenly the effect of foreign competition, may not be in the humor on Jubilee day to bless the memory of the apostles of free trade, but whatever may be said as to its applicability to other countries, all parties seem to be agreed that for the

of food imports to Great Britain in consequence of the extension of the productive area of the world has been enormous, and in a rate far greater than the growth of population. The average imports of wheat and flour now exceed 100 millions of cwts. per annum, as compared with 35 millions in 1861-5, and the importation per head of grain of all kinds has risen from 22½ to nearly 500 lbs. It was naturally supposed that the cost of transit of such products from distant lands would always maintain a certain margin of difference in favor of the home producer as compared with the foreigner, but the marvelous development of the means of transportation by the introduction of steam power, which is another striking feature of the record reign, by which distance is practically annihilated, and the produce of lands thousands of miles distant have been brought nearer to the English market than the crops of farms in the extreme parts of the Island itself, and at prices actually less than the cost of production in England.

Animal Products.—In consequence of the keen competition of foreign-grown cereals, English farmers turned their attention more to meat production, cultivating less land, and laying more down to grass. But soon the same causes which brought them competition in the grain market met them in the market for meat, in which Canada, as we all know, has shared to a very gratifying extent, our exports of live stock having increased in value from \$124,796 in 1867 to \$10,095,648 in 1895. In the last few years the British farmer has probably found his best profits in sheep and in the field of dairy products, and immense progress has been made in the Old Land as well as in many newer countries in the latter industry, which has been brought to great perfection by the introduction of labor-saving machinery and improved methods. But here again foreign competition faced the plodding producer in the home field and Canada. The United States and many European countries have invaded the markets of the Motherland with enormous consignments of dairy products, in which our own Dominion has taken the lead in one respect by long odds, both in quantity and quality, winning an enviable reputation for the latter, which let us hope she may be careful to guard and maintain. Our exports of cheese have grown in value from \$1,577,072 in 1867 to \$14,253,002 in 1895.

Agricultural Exhibitions.—The founding of the Royal Agricultural Society, just after the accession of Her Majesty, marked an important era in the progress of agriculture, especially in the application of science to the industry; and in this connection we may observe that the deep practical interest taken in this enterprise by the Queen and other members of the Royal family from its inception to the present time has been a potent factor in maintaining and increasing the influence and usefulness of this excellent organization, Her Majesty and the Prince of Wales having each filled the Presidential chair in turn with titled noblemen and with successful, practical farmers and breeders of pedigreed stock. The offering of liberal prizes by this society for the best specimens of improved live stock, the best cultivated farms and yields of crops, the best essays on agricultural subjects and the management of farm lands of various qualities of soil, together with the encouragement given to exhaustive experiments in the use of artificial manures, proved exceedingly helpful in stimulating to improved methods in farming, in the breeding and feeding of stock, and the attainment of a higher standard of excellence. The multiplication of agricultural societies and exhibitions in England and America has been remarkable and their influence has been salutary to a large degree, though none have been so thorough and systematic in their work as the Royal.

A notable feature in America has been the intermittent development of farmers' organizations for political and other purposes.

The Application of Machinery to many of the operations of the farm, especially to those of harvesting and threshing, has made very gratifying progress in the last 60 years, and has done very much to facilitate the work and to lighten labors and make it more agreeable. The sickle and the scythe had a long and honorable record as sovereigns of the harvest-field, and were in universal use in the early years of this century. But the evolution of the self-binding reaping machine belongs practically to the Victorian era; for while it was in 1826 that a Rev. Mr. Bell brought out a machine, which in England still bears his name, with an endless apron which received the cut grain and delivered it in a swathe at the side, it was not till 1849 that an American inventor added a second delivery apron, and by means of this carried the grain over the drivewheel and discharged it into a receptacle whence it was delivered at intervals in sheaves. The degree of perfection to which harvesting machinery has been brought is one of the most satisfactory features in the experience of the present-day farmer. Though it was in the latter part of last century that the drill for sowing seed grain was practically invented, it was not in general use for many years after, and as late as 1837 we read of wheat being largely planted in England with a "dibber" at seven shillings an



THE QUEEN AND PRINCE CONSORT IN 1861, THE YEAR OF HIS DEATH.

circumstances of that densely-populated land so largely given to manufacturing and industrial pursuits the adoption of a policy which brings the greatest good to the greatest number is sound political doctrine, and as Mr. Richard Gibson indicates in his admirable article in this issue, it determined the unrivalled pre-eminence of Britain in the live stock world. The balance of power now passed from the hands of those who mainly represented the growers of wheat to the hands of those who represented the purchasers of bread, and the widening of the franchise of the people contemporaneously with the adoption of an improved and more liberal system of education has given to the world a splendid example of the sovereign people ruling wisely and well under a limited monarchy.

New Lands Open.—The opening up on a large scale of agricultural lands has been one of the most distinguishing features of the Victorian age, brought under cultivation, not only in the colonies of Great Britain but also in the United States, in South America, in India, and elsewhere, which has vastly increased the food supply of the world, and served to meet the wants of the teeming millions of the earth's ever-increasing population. The hand of Providence is plainly visible in the wise and beneficent provision for the sustenance of the people and for relief from the congestion which must inevitably have occurred in the great centers of population but for these outlets. The increase