

its powers, with the different sorts of fuel, the dew &c.; *light*, the active and indispensable principle in the growth and ripening of all kinds of crops. Chemistry, that science which presents itself to our view in a thousand different ways, in spite of its often causing its votaries to despair, by its apparent mutability, has made, incontestably, great progress in our age, and has rendered the the most valuable aid to agriculture. Owing to the discoveries made by this science, the whole system of cultivation seems doomed to undergo a change; it is from Chemistry that we learn the real value of those mineral manures which we extract from their repose in the rocks; manures of such surpassingly concentrated force, that they far excel in their effects the richest animal composts; it is from Chemistry that we learn how to decompose, or dissolve substances, so as, by transmutation, to form new combinations; it explains the effects of fertilisers, tells us what matters are wanting in the composition of our soils, teaches us how to supply the defect, and, finally, it defines, precisely, the nutritive worth of our agricultural products, and shows us how to convert them, most profitably, into *fat, muscle and bone*. A lengthy catalogue, indeed! We must, still, add *meteorology, geology, botany and zoology*. These are a few of the sciences which lay their offerings daily at the shrine of the Goddess Ceres.

The study of these sciences is eagerly pursued by the intelligent and educated sons of Farmers in every country where agriculture is held in honour.

In consequence of their efforts, the science of *mechanics* has produced those labour saving implements we see on every modern farm; *chemistry* has given reputation, honour and fortune to thousands, *zoology* and *anatomy* have aided in transforming the different races of cattle, to the undying glory of the Collings, the Bakewells, the Bates. See, how many careers of diverse kinds are connected with the cultivation of the soil, when it is fairly and sensibly carried out, and then say, if the future open to our children, if we direct them to an intelligent study of agricultural science in its fulness, be not filled with the most beneficent and hopeful prospects.

I intended to speak, in this essay, of those allied industries, which have changed the face of entire countries, which have caused the most ardent labour, the study of science in its deepest moods, and the most perfect form of agriculture to walk abreast, assuring, by this means, to individuals, as well as to the State, the most secure source of wealth, and the most enduring stock of prosperity. It may be said, with profound truth, that the sister sciences are the richest crown, the last perfection of agriculture.

But, I must stop here. I think I have shown that agriculture is of divine origin, taught to man by the Creator himself at a time when man seemed fated to enjoy immortal happiness on this earth; that the labour which it demands is still a source of strength and enjoyment; that agriculture is the safeguard of the family, and of the State, alike, and that it offers a career, intellectual and scientific, noble and productive; a career, in fine worthy of pursuit by the most elevated, the most solid, the most thoughtful minds.

On Forage Crops. (1)

Nobody who has thought much upon the subject of farming in Canada can avoid seeing that the probable course of events demands an entire alteration in the system of cultivation on our older lands. I do not propose, in the present article, to speak of those pleasant spots, where, as in the bottom, or *interval* meadows, along the vagrant *Coaticook*, or the rocky-bedded *St. Francis*, the grass is rarely wanting, even in the

(1) By Arthur R. Jenner Gust.

driest times; but, as is well known to my readers, there are tracts of really valuable land, where, owing to the shallowness of the soil, or to the poorness of the preparation, the herbage, when once eaten bare, refuses to spring again, rain, it never so abundantly, until the season is so far spent that the produce of meat, butter and cheese is cut hopelessly short for that year. Of course, the management of the pastures still leaves much to be desired, but, I think, there are signs of improvement—the subdivision of the fields employed for grazing purposes is one of the chief points. In the great grass farms of Leicestershire & Northamptonshire, England, the opinion, well weighed, and backed by the experience of centuries, is, and I beg to call particular attention to the fact, that, 50 acres, in three enclosures, will fatten as many bullocks, as 60 acres in one piece! Rather an important affair where land is worth from £2 10 to £3, an acre per annum, to say nothing of tithes and taxes and rates which, probably, amount to another pound.

I have, in my mind's eye, as I write, a charming spot not far from Compton Centre, 100 acres of pasture. Into this, every year, in May, walk 20 young bullocks; out of this they never escape, until they are placed in the yards for the winter. Fancy a pleasant dinner of soup, fish, cutlets, pastry, vegetables, cheese and salad, all to be eaten off the same plate! Fancy this renewed, day after day, week after week, for five months, with the agreeable accompaniment of a dozen, or so, of friends poking their noses over our food, in their curiosity to see if any morsel more delicious than usual have escaped our attention! It would require Dean Swift himself to do full justice to the nastiness of the subsequent description, so I won't attempt it. Well, this is, exactly what these poor bullocks have to endure, in their way. I know, from personal observation during two summers, that at least one third of the pastures are utterly wasted, in this manner alone, through almost the whole of the richer parts of the Eastern Townships.

However, the improvement of pastures and of meadows is not my present business.

Forage crops, in this country, if cultivated systematically, give very little trouble and are immensely profitable.

They give very little trouble, because, when once sown, they take care of themselves, requiring no hoeing, and they are immensely profitable, because they supply the greatest void in our husbandry; green, moist and wholesome food in the driest time of the season.

Let us, first, see what the different sorts of forage crops are; and I think they may be divided into two classes, viz., those that are suited to the feeding of horned stock and horses; and those that are more peculiarly adapted to the wants of the sheep.

Again, of those crops which are beneficial to the cattle, some seem better qualified to produce, when given to cows, superior butter; others, are, on the contrary, more useful to the cheese factory; others, to the production of large quantities of milk, poor in quality, but, considered by the vendors, apparently, quite good enough for the consumption of the dwellers in our towns.

They are as follows:

Rye,	} for horses and cattle.
Lucerne,	
Tares, or vetches,	
Clover,	
Indian corn,	
Hungarian grass,	
Rape—for sheep	

There are, doubtless, many others worth a trial, but these I know, from personal experience, to be good, suited to our climate and to our soils, and, if sown at proper seasons, capable of filling up most, if not all of those terrible gaps which,