

working days, for I believe that a working horse would yield as good beef as this, but young, juicy beasts, well cared for from their calf days, and kept in growth, winter and summer, with the full intention of maturing them early for shipping beef.

Under our present system of working it takes four or five years to build up the frame of an animal on which the flesh and fat should then be laid, and from which, and not from the frame, the butcher and equally the farmer, is to get his profit—if any. The frame should, therefore be simply used as a machine to work out nature's process of converting food into flesh, and carrying it when so made; this frame is the most expensive part to make and exhausts the most valuable constituents of our farms—the phosphates—and in itself is unprofitable and yet we find that in nine cases out of ten as soon as an animal reaches this stage, when the original outlay might be turned to some useful purpose, the owner, instead of studying how much beef he can possibly put on the animal, casts about to see how soon he can get rid of this carcass, and commences bringing on another to the same stage. Contract beef is the curse of the country; the animal is sent to the butcher just at the stage when it should be put up to fatten—another year's feeding would have doubled its value; but the farmer parts with it, and spends another four years in bringing on another animal to the same stage, thus incurring the maximum of outlay with the minimum of profit. I know that our farmers see many difficulties in the way of raising fattening food for their cattle, but these difficulties shrink wonderfully when fairly faced. Turnips are easily cultivated and do well, give an enormous yield, and are very valuable for fattening cattle.

The new system of ensilage, or pitting green fodder for winter use, is rapidly growing in favor. In nearly every section of the province it is being tested, and though no doubt there will be some disappointments and failures, yet its record proves that it has succeeded elsewhere and it will be our incapacity and not its fault that will hinder its success here also.

Imagine a crop stated to yield from 30 to 75 tons to the acre that can be cut and at once removed from the field, and stored without any delay, it thus renders us almost independent of weather, as the wetter it is put away the better it is; a crop that for feeding purposes is stated to be equal to half the weight of the best hay. Imagine your land thus giving you from one acre, at the lowest computation, fifteen tons of the best hay, or to use the common form of calculating farm value, that will winter four or five head of cattle. What a future it opens out to our farmers, and this with a crop that forms a fitting preparation for a crop of wheat, and its following clover or grass crops. It has what is to my mind another immense advantage, it cannot well be sent to market, it must be fed on the farm. It will thus swell the manure pile, encouraging the farmer to increase his breadth of land sown to it the following season, and thus almost compel an increased enrichment of the farm from year to year. Our neighbors who do not go in for turnips, but depend on Indian corn as a drill crop, are using ensilaged fodder, principally green corn, in place of hay; but from all I

have read, I incline to think that, given alone, it will hardly furnish heat enough to the animal in our colder climate, and I believe we must rather let it take the place of turnips, and feed it out with cut straw. Hay, I hold to be too expensive an article to be fed to fattening cattle profitably. Of course it has more valuable food properties than straw: hence it commands a higher price in the market, and our business is to sell to the best advantage the produce of our farms. We follow the mixed farming; we have grain, straw, hay and cattle; we sell the grain and the hay, and devote ourselves to raising a crop, be it turnips, or be it green crop, that will enable us to feed the straw to our cattle, and send them away fat, bringing us in a handsome profit.

I know it is the fashion amongst a large number of our people to sneer at scientific farming. There is some reason in this idea,—theorists chose to assume that it was merely an affair of chemistry to farm,—you were to ascertain the constituents of the crop you wanted, to assure yourself that these elements were present in the soil or in the air, and, presto! the thing was done; it must be the fault of the farmer if he did not get his yield as desired.

Were this apparently simple process all that is required, a revolution in other than farming matters should long ago have been worked out. Every chemist knows the constituents of a diamond, he can obtain the carbon in any quantity, but still he is unable to compel the elements to assume the shape and properties of a diamond,—and this could be done in a laboratory, under cover, and with all conditions favourable, whilst the farmer has to depend on light and heat to assist him. Dr. Siemens, who we all know by name as one of the principal owners of the Londonderry Iron Mines, and hence a great benefactor to Nova Scotia, as developing one of its most important industries, lately satisfied himself that the electric light was a successful substitute for the natural light as an element of the growth of plants, but Providence as a general thing, furnishes us with sufficient sunlight here to relieve us from incurring this additional expense, so we must consider that for practical purposes we are still to depend on nature for light, heat and moisture; these come in too large or too small a quantity at times, and then the chemists' theory does not work; but we know too, that all the elements necessary to complete the plant may be necessary, but not in form available for its use. The British government served us out with green coffee berries in the Crimea, and then expressed surprise that we did not make ourselves nice warm cups of coffee on our return after a cold, weary watch in the frozen trenches of Sebastopol. Our men died by hundreds for want of these and other necessities—occasionally we got raw beef and pork, but had no fuel with which to cook it; it was a practical lesson the farmer can apply, that the necessary food might be actually present, yet not in a condition to be assimilated. But our farmers did not understand the reason why the theorists' plan fell through, and the pendulum swung the other way; the farmers sneered at the scientific men and pronounced science as applied to agriculture a failure and a humbug. They travelled in the old tracks, from time to time learning by experience that certain things "paid," such as putting on

manure to get a better crop; keeping the manure under cover to prevent the rain washing it; putting muck under their cattle to absorb the liquid; spreading lime on the surface. These things were done by farmers who sneered at science as applied to their occupation, and yet these operations were as thoroughly applications of science as any performed by a chemist in a laboratory. These men of the so-called old school, would have been just as much surprised to hear that they were farming scientifically, as was Moliere's character in *Le Bourgeois, Gentilhomme*—M. Jourdain, to find that he had been talking prose all his life without knowing it.

A very able army officer, Col. Chesney, in a lecture lately delivered in India, which he entitled, "Taking Stock," and which was devoted to a consideration of our military capacities as a nation, summed up the qualities necessary to a successful general as being, originality, vigour and energy of character; originality to conceive, firmness to pursue the plans which he has conceived, and untiring energy in that pursuit in order to obtain his ends. All great masters in the art of war have shewn these gifts. Frederick the Great and Napoleon, in these modern times, studied the points on which their enemy, from one or another cause, was weak, and how they could best realize their resources, either in the character of their troops or the theatre of war, to establish their superiority. It was in the application of old and well-established principles to new surroundings, that their merit consisted, and their successes followed, and we may surely learn a lesson from this. The principles on which our farming operations may and must be carried on are established, but in a new field, for this is practically a new field, with new markets opening up, with new conditions as to competition through facilities of transport afforded; we must adapt ourselves, in fact. To succeed we want originality to conceive a new system fitted to our climate and surroundings; we must not be daunted by an occasional failure, which should but lead us to study more closely the system we are working out with a view to modification or improvement, and we must, above all, apply energy to carry out what we undertake. I know no career in which success can be obtained without energy; a listless, sleepy, or lazy man will not succeed in any avocation.

If I were to base my views as to the chances of success on the results of the present season, which has from the first been very unfavorable, I should be inclined to take rather a gloomy view of our chances, and to any young man asking my advice as to going into farming, I should borrow from the English comic paper, *Punch*, the advice to persons about to marry, "Don't." But I believe this year, with its heavy snows, very late cold wet spring, summer drought, and early autumn rain storms, to be so exceptional, that we need not be discouraged by it, and I do not hesitate to urge others to do as I am doing myself, "take hold of farming with a will, and it will justify your faith." I am not altogether a believer in these district exhibitions being supported from the Provincial funds. I believe they should be held, but under County or united County auspices, and be supported from local resources. These should be the feeders, and at the same time, as it were, the sieves or