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appreciation of agricultural education, and having gathered her lessons from both hemispheres, her best authorities are averse to state aids even in the diffusion of technical education amongst her agricultural classes. She has established successful dairy schools without government interference, and the thirst for knowledge has become so great that these institutions are self-supporting.

When we turn our eyes to our own continent we see different influences and different conditions. In a new country on a virgin soil, where the inhabitants are limited and the acres almost illimitable, where the highest possibilities of agriculture may be brought forth by muscular force, and where the evils of a worn-out soil may be compromised by a change of location, there is little natural incentive to improved methods of cultivation. However, the first experiment station proper in the United States was also founded through the efforts of a body of intelligent farmers whose honest purpose was the amelioration of their agricultural condition. One station after another was established and the cries for state aid sounded louder and shriller. There is but one station in the Union, the Houghton Farm, which was established by private enterprise, and hence free from political influence. None of those subsidized or controlled by the governments of the respective States in which they are situated, have established a name in scientific agriculture; they are but mockeries of the stations which they seek to imitate. The professors are mostly competent men, but they are hampered in their work by the exigencies of party. The experiments to be conducted are dependent upon popular sentiment, and there is no harmony or division of labor existing amongst the stations. The practical good they have accomplished is mostly confined to the analysis of commercial fertilizers sent them for the purpose of detecting fraudulent vendors. They have not the confidence of the farming community. Many of the bulletins and reports which they distribute deceive the farmers; for in their haste and anxiety to show what good they are doing, the experiments are frequently acted upon before they are thoroughly and repeatedly tested. There are, however, a few exceptions to these reprehensions, notably Dr. Sturtevant, director of the New York experiment station, who is not only a practical farmer but a born experimenter and scientist—a man who makes office subordinate to truth, and many of his experiments and investigations have a place in agricultural science, but this is due to the extraordinary personal qualities of the man, which overcome the weaknesses of the government system.

On the other hand, the Houghton Farm is free to act with promptitude, without having first to study political expediency, and in this way it has frequent opportunities of accomplishing good when the opportunity of doing so by the other stations is past. Its experiments are accurate and practical, and its undivided attention is fixed upon such experiments as will be of scientific worth, and hence also of value to the practical farmer.

Before consenting to an enterprise involving such an enormous expenditure of money, we should endeavor to ascertain if we are less trammelled by party intriguers than other gov-

ernments. Are our public men better imitators than partisans in other countries? What is lacking in the enterprise spirit of our people as individuals? Are the burdens of taxation upon the shoulders of our farmers not yet sufficiently oppressive? Is our army of office-holders and office-seekers not yet sufficiently great and dazzling?

If our Provincial station and those of the neighboring States were doing a useful work, their example would soon enough be followed by our Maritime and other Provinces. In the introduction and culture of new varieties of seeds and trees our seedsmen and fruit growers are doing all that is possible to be done, and many are conducting experiment stations of their own. This is just the state of affairs that should exist. It is from the farmers and fruit growers that agricultural editors procure the most reliable and valuable information, and their facilities and eagerness for its dissemination are far greater than those of government officials. The same truths hold good with regard to the other departments to be undertaken by the proposed bureau. The Government further propose to appoint their employes as reporters for the press. The competition in the agricultural press is already so keen that the editors are under the necessity of publishing only such information as they know to be reliable and seasonable, and any attempt to disseminate blue-book literature would be a bold step towards the servility of the press. If the Government insist upon this clause, they will have to pass an act compelling the press to accept their reports, which would have the tendency to degrade not only journalism, but also every other private enterprise in the Dominion. When an editor publishes the report of an experiment, he upholds the efficiency and integrity of the experimenter, and the ways of governments are too dark and mysterious to justify this action.

With regard to the stamping out of contagious diseases, the Government deserve great credit for what they have already done in this direction. They have forbidden diseased American cattle from crossing into our borders, and so long as they strictly enforce their regulations, we need not fear infection. The morbid attempts of the American Government to stamp diseases out of their country have disgusted many calm-headed stockmen, and the propriety of raising funds by private subscription for the purpose of securing more prompt and vigorous action is being energetically discussed. Very few of our veterinarians are pining for office.

In the matter of commercial fertilizers our farmers require to be taught how to conserve the manure they have, instead of creating employment for adulterators and speculators of the vilest kind. American experience has taught us this valuable lesson. Besides, our experiment stations have elicited nothing of value that has not already been investigated by Liebig, Lawes, and a few others, and with regard to their application one station is of no use for the whole Dominion; every locality must make tests for itself, as is done with the different varieties of seeds.

Perhaps the greatest shams that have been perpetrated by governments is their action in

reference to live stock matters. They have been the followers, not the leaders, of enterprise. They have seized and nursed the booms from the lap of private speculators. When a craze breaks out respecting the merits of a certain breed, they must put their testing machines in operation. They must gorge for records or for the purpose of bringing their fattened animals up to the standard of those speculators who gamble in prizes and pedigrees, and many of the feeding experiments have neither practical nor scientific worth.

In the statistical department of the proposed bureau, still greater caution should be exercised. Bureau statistics did not originate for the benefit of the farmer. They are guides for politicians and speculators. The ruling prices inform him how much farm products are stored up in the granaries of the world; whatever is lacking in this particular is supplied through the natural channels. It is true that the favorites of the members of parliament can be reached by means of bureaus without the aid of the press, but this fact rather disfavours their usefulness to the farming community as a whole. If our farmers want to convert Ottawa, like Washington, into a dumping ground for all the rubbish of partisans and broken-down speculators, by all means let them favor the establishment of the proposed bureau. Other institutions of science and art have flourished by enthusiasts in their profession; so can agriculture.

How to Save the Manure.

No. III.

By "heap" we do not mean the indiscriminate scattering of the manure all over the barn yard; fermentation cannot take place by so doing, for the mass is built up so slowly and the surface exposed is so great that the nitrogenous substances which cause the ferment are usually washed away before chemical action can take place.

The size of the heap depends partly upon the quantity of stock and partly upon the quantity of manure required for spring use. First, consider that, on an average, six months are required to produce a sufficient amount of fermentation, the time being somewhat more if the process is slow, and somewhat less if the heap is allowed to ferment actively. A separate heap should be built every four or six weeks; the width may be six or seven feet, the height about the same, and the length will, of course, depend upon the quantity of manure that can be made during the time mentioned. In order to make sure that fermentation will start, it would be a wise precaution to put some dry manure, earth, or other good absorbent under the heap to catch any liquids that may attempt to escape. If active fermentation is required, it will be well to tramp the heap as lightly as possible for reasons before stated.

Now comes the perplexing question as to the regulation of moisture. It is plain that if more bedding is used than will absorb all the urine, the heap will be too dry, especially if it is loosely thrown together, and the result will be fire-fang and mildew, which is very injurious to the manure. On the other hand, if the heap becomes saturated with rain, the air will be excluded, and consequently no fermentation can take place. During the severe months, when