

conditions appear to have little effect in changing the constituents of milk throughout a number of sources." As to winter dairying, which has received considerable attention of late, the report is inconclusive, although the considerations advanced are on the whole favourable to its extension. The actual cost of producing butter in winter is placed at $7\frac{1}{4}$ cents per pound, and cheese at 4 cents, against a cost for cheese in summer of 2 cents, and for butter of 5 cents from ordinary pasture, or 2 cents from permanent pasture. The estimates of cost of food are made on the basis of cost of production—not market prices. At first sight the advantages in cost seem to decidedly favour summer production of butter, but there are various other considerations, amongst them the high price of winter butter, that justify greatly increased attention to winter dairying. Prof. Brown estimates the net value of dairy products, when produced for a creamery, as \$24 for the winter season.

The experiments with the microscope on the size of butter globules are illustrated by an interesting plate. Taking 1.00 to represent the average size of the larger globules in Ayrshire milk, the range amongst twelve breeds is found to vary from .50 in Hereford milk to 1.40 in Aberdeen Poll. The size of the globules does not appear to have much relation to the distinctions between beefing and milking breeds, nor to the difference between thin and thick milk, but a very marked connection is noticeable between the time occupied in churning and the size of the globules. Thus the size of the globules in the milk of Shorthorn grades compared with the same in Guernsey milk is as 5 to 8; the time occupied in churning in the former case is forty minutes and in the latter only ten. Evidently there is much more room for inquiry into the relation of globules to dairying. A decidedly novel discovery made is that the globules are very elastic, and on being compressed assume a distinct hexagonal shape. This suggests that the kind of churning which breaks the globules is unnecessarily harsh, as well as detrimental to the texture and keeping qualities of butter.

A very important subject to Ontario farmers is presented in the chapter on permanent pasture. Prof. Brown maintains that one acre of such pasturage should maintain two cows in the best condition; that an acre of choice permanent pasturage should produce at least five thousand pounds of milk for a season of five and a-half months, against the usual return of one thousand two hundred pounds per acre of ordinary rotation timothy and clover. Instead of \$10 to \$12 per cow, he thinks that the yield per season should be \$25 to \$30. The facts are suggestive of a vast possible increase in the profits of dairy farming.

In regard to the best breeds of cattle for Ontario, it is not likely that everyone will agree with Prof. Brown's abrupt dismissal of all beef breeds except the Shorthorn, and all the dairy breeds except the common grade. "The special dairy wants of Ontario can be fully maintained," he says, "by selection from her common cows—the acclimated, hardy, ranging, non-beefy and liberal milking grade." The results of the experiments at the farm go far to support this high opinion of the common Ontario cow, which possibly may yet be in demand in other countries. For the special beef and the conjoint beef and dairy wants of Ontario, he looks without hesitation to the Shorthorns.

The increased attention given to dairying comes none too soon. It is only slowly that the country can be brought to realise that Ontario is not improbably on the verge of a revolution in agriculture, and preparedness for it would be the best guarantee against disastrous results. That the future of wheat-growing—the mainstay of our farmers—is anything but promising the clearest-headed agriculturists have long perceived. It is, perhaps, more difficult for our farmers to realize that the future of our cattle export trade, which has in recent years been a great factor in the prosperity of the country, may be even less hopeful. A "national lesson" is submitted by Prof. Brown in his statement that "probably for the first time in the history of shipping live-stock to Britain, and certainly for the first time in the experience of the farm, have store cattle been bought and, after fattening, sold at the same price per pound." If the cessation of cattle disease in Britain, the adoption of a thorough system of checking outbreaks, and the changes in British agriculture mean anything, they mean that this year's experience in fattening cattle for export is not likely to be exceptional in future. We may even be thankful if the experience should not be worse. In view of the outlook, both for beef and grain, the attention to dairying indicated by the experiments at Guelph is a reason for congratulation.

J. G. M.

A LADY one evening calling on Guizot, the historian of France, found him absorbed in his pipe. In astonishment she exclaimed, "What! you smoke and yet have arrived at so great an age?" "Ah, madame," replied the venerable statesman, "if I had not smoked, I should have been dead ten years ago."

POLITICAL EDUCATION.

AMONG the many societies of New York organized for the promotion of this, or the suppression of that, few seem more sensible in purpose and methods than the society for Political Education established in 1880. Its executive committee includes the well-known names of Hon. David A. Wells, Prof. W. G. Sumner and Charles Francis Adams, jun'r. The society owes its existence to the conviction that the success of a free government depends on the active political influence of educated intelligence, and that parties are means not ends. Its organization is entirely non-partisan, and intends nothing but the awakening of an intelligent interest in government methods and purposes, tending to restrain the abuse of parties, and to promote party morality. Democrats, Republicans and Independents are represented among the organizers, who are, however, agreed in the main upon these propositions:

The right of each citizen to his free voice and vote must be upheld. Office-holders must not control the suffrage. The office must seek the man, and not the man the office. Public service, in business positions, should depend solely on fitness and good behaviour. The crimes of bribery and corruption must be relentlessly punished. Local issues should be independent of national parties. Coins made legal tender must possess their face value as metal in the markets of the world. Sound currency must have a metal basis, and all paper money must be convertible on demand. Labour has a right to the highest wages it can earn, unhindered by public or private tyranny. Trade has the right to the freest scope, unfettered by taxes, except for government expenses. Corporations must be restricted from abuse of privilege. Neither the public money nor the people's land should be used to subsidize private enterprise.

A public opinion, wholesome and active, unhampered by machine control, is the true safeguard of popular institutions. The methods of the society consist in issuing lists of standard works on current political and economic questions; in selecting annual courses of reading for members, and in publishing in cheap form new political and economic discussions. Messrs. Putnam, who are the society's publishers, have produced an extended list of its valuable books and pamphlets, and these circulated by the thousand throughout the Union are doing good work. A baseless opinion widely prevalent in America is that politics require no special study, and that politicians need none of the training indispensable to manufacturers, bankers or engineers. In so far as the society for Political Education can dispel that illusion it will serve the cause of an intelligent use of the suffrage. Although written for American readers, the issues of this excellent society are well worthy perusal in Canada. Our people are quite as much in need of instruction in political economy as their neighbours, and quite as little alive to the weighty responsibilities of voter and legislator.

Z.

CAMPING OUT AT COLE HARBOUR.

As it is a good thing at the outset to place oneself on terms of easy intimacy with the "gentle reader," I will begin with the frank confession that when I was invited to join in a duck-shooting expedition to Cole Harbour, my ignorance of all matters pertaining to powder and shot was only surpassed by my ambition to be a sportsman. Gunpowder in every form and under every guise had been sternly prohibited throughout my knickerbocker period, and even after I had in due course emerged from this chrysalis stage and evolved into the dignity of long trousers the maternal ukase sufficiently retained its prohibitory power to curb all Nimrodic propensities. But it was now some time since I had donned my first tail-coat, and among the wild yearnings which its assumption awoke within me stood out in clear relief the desire to shoot something feathered. When, therefore, one fine autumn day in the very height of the sporting season, two friends sought my co-operation in a few days' camping-out, I rose superior to all cautionary promptings, internal, external, or maternal, and jumped at the suggestion, especially as I could hardly have secured my initiation into the mysteries of sport under more favourable auspices.

Dick and Gordon, my companions, were two as fine specimens of the stuff that makes Britannia mistress of the waves as the fleet then in port could have turned out. Inured to exposure in all quarters of the globe, abounding in muscle, good humour, and enterprise, and well-trained sportsmen withal, more delightful companions could not have been desired, and I felt sanguine of being in for a good time in the hands of such competent mentors.

The early sun shone down encouragingly as we set forth, and every bead of dew that glistened upward at us from the grass seemed to wink a prosperous outcome to our venture. Cole Harbour, be it understood, is a