

the "Russian apples," and I shall draw attention to them quite often in the course of my remarks, as we are testing this class extensively. In order to give you an idea as to the causes which led to their introduction for trial into this country, touching upon the early history of the movement, I will relate briefly a few facts relating thereto, upon which hinged the beginning of the work.

Ever since the introduction of the Duchess of Oldenburg from Russia, by way of England, about 40 years ago, there has been a growing interest in the fruits of that cold climate. The first large importation was made in 1870 by the United States Department of Agriculture. This comprised 252 varieties, but owing to the very crude state of Russian pomology, evinced by the many synonyms afterwards found in the collection, and coupled with long unpronounceable names—the work of sifting the good from the bad in this cumbersome list has been laborious and slow. Without going into details in regard to their merits and demerits I may say, that already a sufficient number of valuable varieties have been found to repay all the expenses incurred in the work of introduction and trial, and when we look at the possible advantages to be derived from these foreigners by uniting them with our native varieties, thus obtaining hardiness on the one side and possibly quality on the other, the benefits likely to accrue are inestimable. I have said that the first importation was made by the United States Department of Agriculture, but the credit of bringing this work to a practical and successful issue is due to a Canadian—one now departed—I refer to the late Chas. Gibb, of Abbotsford, Quebec. At great personal expense, in company with Prof. Budd of Iowa, he undertook the arduous task of visiting the various localities in which these fruits were grown, making notes on condition and quality of tree and fruit. The result of those investigations—a fair and unvarnished statement of facts—was published, and is now the foundation of our knowledge of the Russian fruits.

As far as we know at present, any apple tree not up to the grade of hardiness of Duchess, Tetofsky, Wealthy or Pewaukee is of doubtful usefulness for planting in the district of Ottawa or similar latitudes. I have referred to the work in apples. Experiments of a like nature have been carried on with pears, cherries and plums.

M. Craig was with the late Charles Gibb, of Abbotsford, for several years. A. R. J. F.

EFFECTS OF FORESTS.

JOHN CRAIG, HORTICULTURIST TO EXPERIMENTAL FARMS BEFORE AGRICULTURAL COMMITTEE OF HOUSE OF COMMONS.

The effects of forestry on the climate of a country are nearly all beneficial; such as more equal distribution of rainfall. This is one of the most important points to be considered; another is the regulation of the temperature, by this I mean prevention in a measure of extremes, the possibilities of a sudden rise or fall in the temperature—changes so frequent in prairie districts—may be lessened. Then again evaporation from the soil is very much reduced. There is a vast difference between the condition on the surface of the bare and uncovered soil, and the soil on the forest floor. A forest floor serves the purpose of a sponge in collecting and holding the moisture which comes down in the form of rain. The fine root system of the trees assists in drawing up moisture from below. As the rain falls it collects around and within these forest centres which hold and give it up gradually, thus obviating spring torrents and summer freshets. Another important point which has not been sufficiently emphasised in connection with forest influence is the prevention of the strong force of the winds, with their great evaporating power. The evaporating power of the wind is generally in direct proportion to its velocity. The greater the velocity the stronger its evaporating power. Thus we can see the value of shelter belts. The more protection we have, in the way of shelter belts the less sweeping winds we have, and the moisture is taken less rapidly from the soil. There is no doubt that as soon as we get in the North-West a sufficient amount of forest area to mitigate to some extent the force of the winds, we shall have a much less rapid evaporation and much more favourable conditions, for fruit culture and agricultural operations generally.

By Mr. McGregor:

Q. Would that affect garden- too?—A. Certainly. It would act in the direction of preventing the direct action of the sun's rays, and be of great assistance at the time of seed germination in the spring, as very frequently the first sowing of garden seed is much disturbed by spring winds. Among the most promising varieties of forest trees for giving quick shelter, I wish to draw your attention to a class destined to be one of great service in the North-West. I refer to the test-

ing of a large number of fast growing willows and poplars which have from time to time been introduced from East Europe and the plains, and steppe country of Russia. We have now growing at the Central Farm, raised from cuttings, several thousands of these willows and poplars which will be increased as rapidly as possible. They are a remarkably fast growing hardy race of trees. We have already tested them at a few points in the North-West in small quantities, and they have given every indication of hardiness and success. We are now making arrangements to continue the work of distributing next year by sending a large selection of these to a number of points in Manitoba and the North-West. Among those which indicate great future usefulness are *Populus Certinensis*, *Pop. Petrovsky*, *Salix acutifolia* and *Salix laurifolia*. If we can introduce and establish at different points groves of these hardy fast-growing poplars and willows, and thus obtain a little shelter, we may hope a little later on to introduce some of the more tender and valuable sorts which are not able to withstand the rigors of the climate unprotected, and so, by making a small beginning, our woods may be gradually increased.

For the Dairymen's Association Meeting at Montmagny; 1892

Our excellent friend, the Hon. J. J. Ross, has, more than once at these most useful meetings, inculcated the valuable but by no means novel lesson, that we should not put all our eggs into one basket. Monsieur Bousquet, the manager of the Banque Jacques-Cartier, following in the same road, in his address to the shareholders, 1890, showed that Montreal alone was paying \$2,000,000 a year for beef to the province of Ontario, and upwards of \$500,000 a year to the United States for hogs. Is this, to continue for ever, this importation from abroad of the main articles of human food? Are we never to even aim at the supplying of our home-market with beef and pork? The answer is plain: as long as we persist in rearing breeds of cattle that are comparatively unfattable, so long shall we be unable to make beef fit for respectable tables; and the same may be said of pork.

There is, prejudice apart, no earthly reason why the same farmer who daily sends his milk to the cheese-factory, or the creamery, should not also at intervals send beef to the butcher. Surely, what other nations are doing we can do! Our soil is not inferior to their soils; our cheese is allowed to be as good as the best of the English cheese; nay more, the Gloucester tenant-farmers, to say nothing of the great landed proprietors of that county, are seeking for means of education in their own proper business to enable them to compete in their own market with the impudent little province of Quebec, which is interfering sadly with the profits of the former, and, consequently, with the rents of the latter.

Whoever of you travelled in Switzerland some 40 or 50 years ago, must have been struck, if he kept his eyes open, with the inferiority of the general construction of the dairy-cattle of that country. Good milkers, no doubt, many of them were, but bony, ill-shaped, hard-fleshed, big-headed, paper-skinned brutes, unfattable at any age, and only arriving at maturity—if they ever did mature—at the age of 5 or 6 years. Visit the same country now, and what do you find? The whole appearance of the herds is altered. The Swiss have gradually created a type of dairy cattle combining aptitude for the pail with a ready propensity, to take on meat. M.M. Huguenin, brothers, at Maix Rorhat have a large herd of cows averaging about 20 lbs. of milk a day, during a season of 330 days—6,600 lbs. a year, and attaining the satisfactory weight of from 1,500 lbs. to 1,700 lbs. at 5 years of age. And it would be superfluous to remark that the same rule has been observed in Switzerland as in other countries that have improved their stock: rigorous selection of the parents; the best specimens of the purest and most carefully bred herds were chosen, and even with all this care every calf was not reared as a breeder. The best of the bulls were kept, and