

the disadvantages of the agricultural portion of the population. It was not in the power of the Government to raise the price of their products, but it was in its power to assist in lessening the rates of freight and putting the products on the market in the best condition. He represented the most important cheese district in Canada, its centre being Ingersoll, and from the experience he gathered there he had no doubt that Canadian cheese, in decent order, could hold its own with foreign products, and even the English product. He had seen in London such signs as "Canadian cheese," meaning that a superlatively good article could be had. All that was required were proper facilities of transportation. He regretted that the butter trade had retrograded both in quantity and in price. Last year Britain had imported \$29,000,000 of butter from Denmark and only \$779,000 from Canada. There was great room for improvement, and the same was the case with apples, eggs, poultry, etc. He had nothing to say against Canadian manufacturers, but he desired to point out that the exports of agricultural products were six to seven times larger than the exports of manufactured articles. He saw with regret all over Canada the painful fact that the farming population was at a standstill. It was time to stop this retrograde movement, and anything that would make the farmers more prosperous would command the unceasing and earnest attention of the Government.

Blight of the Apple and Pear.

By JOHN CRAIG, Horticulturist, Experimental Farm, Ottawa.

During the past five weeks a large number of specimens of apple and pear twigs killed by "blight," variously known under the names of "apple blight," "pear blight," "twig blight," and "fire blight," have been received at this office. The leaves have a brown, scorched, but not shrivelled, appearance; the bark, on the other hand, is shrivelled and withered, in addition to being discolored. The presence of this disease has been noticed in America for more than one hundred years. It is easily recognized by the manner of its growth and development upon apple trees, which is usually as follows: When the tree has made a growth of a few inches, the leaves on some of the young shoots may be observed to suddenly turn brown—in a single night, as it were. If the tree is watched closely, this browning will be found to extend downwards upon nearly all of the twigs which have been attacked. In some cases the discol-

oration of the bark ceases when a larger branch is reached; in other instances the large branch becomes affected, communicating in turn the disease to the stem, in which case the death of the tree may be looked upon as a certainty. Often, however, the scorching and browning affects only the young terminal twigs. Crab trees are frequently affected in this way. It is the least injurious form of the disease. Pears are often attacked in the main branches and on the stems, the disease finding entrance through spurs and tufts of leaves. A tree attacked in this way usually succumbs. Until 1880 nothing was definitely known regarding the nature of the malady. In that year Prof. Burrill, of Illinois, published the first authoritative account of the bacterial or "germ" origin of this disease. Prof. Burrill's investigations were afterwards abundantly corroborated by the careful work of Prof. Arthur at the New York Experiment Station. The disease is known to be caused by a bacteria now recognized in science by the name of *Micrococcus amylovorus*. Prof. Arthur proved the contagious character of the disease, and also its bacterial nature, by demonstrating that it could only be transmitted artificially by using the juices of branches which contained the characteristic bacteria. This disease finds most congenial conditions for rapid development in fast growing varieties having an abundance of succulent tissue. It usually obtains an entrance by way of the youngest leaves, or through the blossoms. At this time the wood is in an immature condition. The bacteria causing the disease may remain alive in dead branches on the tree, and also in those which have been removed, and in this way communicate the disease to healthy trees. In addition to apple and pear trees, this disease attacks other members of the rose family, notably hawthorn and mountain ash.

Blight was prevalent throughout Eastern Ontario and the Province of Quebec in 1892 and 1893. This year it has caused much damage to apple and pear orchards in Southern Ontario, and has been more or less injurious throughout the whole of Ontario and Quebec.

REMEDIES.

No directly effective remedy is known at the present time. The following, of a preventive character, should be applied:

(1) Prune off and burn all blighted branches as soon as noticed, cutting twelve or fifteen inches below the diseased wood, as shown by the blackened and shrivelled bark, painting the cut surface with linseed oil.

(2) Follow such a system of culture as will