tionship to that of fat; that the weight of curd produced from a given quantity of milk is not dependent upon the richness of the milk in fat alone; but that an increase or decrease in the casein of the milk is followed by an increased or decreased curd yield; and that the best quality of curd is produced when the proportion of fat to casein in the milk is highest.

Every cheese-maker knows that he gets more curd from the milk at the end than at the beginning of the season. Do not those makers who contend that this is owing chiefly to the high proportion of fat or cream in the milk do so for want of the knowledge that the milk is, also, at the same time, rich in casein, which, however, owing to the condition in which it is present in the milk, does not admit of its proportion being determined by the eye as does the cream?

J. McCREATH, F.C.S.

The Orchard and Garden.

HORTICULTURE.

Special Attention to be Paid to the Juvenile Department.

The Montreal Horticultural Society held its annual meeting January 27th and elected officers for the ensuing year. In addition, a number of questions of interest to the members were taken up, and an excellent and encouraging address was delivered by the president, Mr. D. Williamson. They had so interested the children that 1013 members now belonged to the juvenile department, and there was every prospect of still more coming in. The principals of most of the Protestant schools had taken up the question, and already the Roman Catholic board was taking a great interest in regard to it. The directors would do well to give this department particular attention. The competition between the owners of city and suburban gardens for the prizes offered by Messrs. Evans and Johnson had been exceptionally keen, and these gentlemen deserved the thanks of the society for their kindness in tendering prizes.

The annual show, which had taken place during the year, had been held in conjunction with the Provincial Exhibition, and the entries had been more numerous than ever, the fruit exhibit being especially large and fine. The incoming directors would do well to consider the suggestion of holding a small exhibition every month, and members should learn that prize money was not the only thing to be sought by exhibitors, but that the advancement of the objects of the society should be sought.

The incoming directors will be asked to decide as to the advisability of issuing a regular monthly periodical.

The choice of the members with regard to the election of new officers resulted as follows; Hon. president, Mr. W. ''. Ogilvie; hon. vice-president, Mr. Rob. t Mackay; directors, Messrs. W. Ramsay, F. Roy, Robert Reid, J. A. Hardisty, John Doyle, Newman, Jules Betrix and D. Williamson; auditors, Messrs, Riddell and Common.

It is pleasing to note that the financial statement of the society shows a balance on hand, whereas last year there was a deficit.

SPRAYING.

Uniform formula needed—Bordeaux mixture—Formula now in use in Canada—Formula for potato-rot—1897 probably a bad fruit year.

Central Experimental Farm,
Ottawa, February 10 1897.

To A. R. Jenner Fust.

Dear Sir,—I am pleased to see in your issue of February 1, an article by Mr. Geo. Moore calling attention to the necessity of spraying if we would preserve our fruit plants from injury by insects and disease. Bordeaux mixture is undoubtedly the best, though not a perfect agent, with which to combat fungous diseases. It has been recommended by this division of the Central Farm during the past five years, and these recommendations have been based upon results obtained by careful experimentation. What I wish to emphasize at the present time is the necessity of recommending for adoption uniform formulae not only of fungicides but of insecticides. Confusion and mistakes arise even in the exercise of the greatest care, and we hear of disappointments and failures occuring here and there, many of which are due to confusion of formulae. The Bordeaux mixture, as first used in France and tried in America, was copper sulphate 6 lbs, lime 4 lbs. water 22 gallons. This formula was used during 1888 and the two following years. It has since been modified by doubling the quantity of water. A disavantage of this formula is, that unless the lime is strictly fresh, the mixture will not be a safe one to use. It is therefore advisable to test it each time. The greater the number of difficulties which appear on the surface, the less a new departure is likely to be practiced.

THE FORMULA NOW IN GENERAL USE IN CANADA.—After carefully testing various strengths of Bordeaux mixture I recommended, in 1892, the following formula, copper sulphate 4 lbs. lime 4 lbs. water 50 gallons.—To prevent leaf eating insects add 4 oz. of Paris green. This formula was, I believe, recommended by Prof. Green of Ohio in 1891. It is now used in Ohio, by the New-York Experiment Station, Geneva, and by the Ontario Government Experimenters throughout the Province. I have found it quite as effective in preventing apple spot, pear cracking, plum and cherry rot, grape and gooseberry mildew, as the formula containing 2 lbs. more of copper sulphate. It does not cause the russetting of apples and pears to the same extent as is seen when the stronger mixture is employed. In preventing potato rot, Dr Fletcher recommends the 6-4 formula, as does also Prof. Jones of the Vermont Experiment Station.

In using the 4-4 formula, having the lime somewhat in excess, if it is reasonably fresh there is no necessity to test the mixture when prepared to ascertain if there is any free sulphuric acid (the corrosive substance) present. This formula is also an easy one to remember. Let us adopt it and put it into practice. In conclusion, I think it well to remind fruit growers that, in all probability, we may look for a year of comparative scarcity of fruits succeeding the year of plenty which has just visited us. A large crop of fruit one year usually means a large crop of insects for the next year, when a small fruit yield will make their depredations all the more apparent. It behoves the Fruit Grower to prepare then for the enemy.

JOHN CRAIG,
Ottawa.

FRUIT-GROWERS MEETING.

On January 28th, a meeting of the fruit-grower's Association was held at Howick. The Minister of Agriculture, the Hon. Sydney Fisher, stated that the Dominion Government was considering the advisability of sending over to England a Canadian, whose duty it would be to watch over the interest of Canadian producers in the English markets. Without making any positive promise, he thought is highly probable that, if the Canada fruit growers would be benefited by such an appointment, it would be made before long.

This seemed to suit the views of the audience, as fruit-growers have long felt that great losses have been incurred by their having had no one in England to attend to their interests.

Mr. Jack, of Châteauguay, spoke of birds and the many instances in which they aided in the preservation of fruit, by devouring the insects and worms that infest the orchards. (Pray do not protect the sparrow! Ed.)

Mr. R. W. Sheppard read a paper on "The Fameuse, and the apple-crop of 1896". This apple is very popular in England. If Canadians wished to keep their hold on the English market, they must send only the best qualities of fruit thither. At present, Canada apples commanded better prices than U.-S., apples, and we ought to maintain this supremacy.

At Howick, on January 29th, the Huntingdon Dairymen's Association held its annual meeting, under the presidency of Mr. Robert Ness. The Chairman, in his address, stated that there were 12 creameries and 77 cheeseries at work in the district of Beauharnois, producing a return of $610,000, $123,000 of which was for butter, and $487,000 for cheese. It was a matter for congratulation that the political leaders of the day had placed at the head of agriculture affairs a gentlemen who thoroughly understands the needs of the farmer.

The Hon. Sydney Fisher, in replying to an address congratulating him on his appointment, said that he occupied his present position mainly because he was a farmer.

With reference to the removal of the quarantine restrictions, he had no doubt, but that the change would be benecial to the farmers of Canada. While speaking on this subject, Mr. Fisher said that he looked for the co-operation of every dairyman in the Dominion in order that any disease which might be found among cattle in different parts of the country might be immediately reported to the proper authorities. In conclusion, the speaker alluded to the benefits which cold storage system would confer upon the agricultural interests of the Dominion, and said that if once Canadian products could be placed upon the English market in first class condition, such great demand would be created for them that the export trade would become a profitable investment for the agriculturalist. At the conclusion of Mr. Fisher's address, letters of regret at the inability to be present were read from the Hon. Louis Beaubien and others. The treasurer's report showed a balance to the good of $217.16.

Hon J. C. Chapais then addressed the meeting at some length on the necessity of cleanliness in dairying if the best results and the greatest profits were to be realised by the dairymen.

CHERRIES; FROZEN TREE-ROOTS; CIDER; FERTILISERS FOR ORCHARD, etc.—Mr. J. C. Chapais read a paper on "The cultivation of cherries in the province of Quebec." A light sandy loam was the best for the purpose (the great cherry-orchard in Kent-England, are almost all on the "Greensand" of the chalk-formation. Ed.) The land should be properly drained (naturally drained, for the roots would soon choke pipes however deeply sunk, and open ditches do not "draw" water like pipe-drains. Ed.)

Prof. Craig spoke of the freezing of the roots of fruit-trees in such snowless winters as the present. He expected a great loss of trees in consequence. As a means of preventing a recurrence of *this condition of things, he advocated* the planting of clover in the orchard. This would serve two objects. Firstly, it would provide nitrogen for the soil, and, secondly, serve to protect the roots of the trees from the frost. The variety of clover recommended was the Mammoth Red, a species which was at once hardy and prolific.

During the afternoon, Mr. Dunlop, of Outremont, briefly described the manner in which the surplus apple-crop was disposed of in the States. The apples were evaporated or canned, and paid fairly.

As for turning the early apples into cider, Prof. Craig very sensibly warned farmers against it, as they by no means suited to the purpose (the best cider-apples of Gloucestershire, Herefordshire, and Devonshire, are almost uneatable in their natural state; hard and bitter; and so are the pears from which the best "perry" is made. Ed.)

Prof. Shutt addressed the meeting on a most interesting subject: "Fertilisers for the orchard." Canada hardwood ashes he considered to be the best and cheapest means of supplying potash, while the extra phosphoric acid could be furnished by bone-meal or plain super phosphate, and nitrogen by sowing clover and ploughing it in; though, as the professor sensibly remarked, there would be additional profit where the crop of clover could be utilised by feeding it to the farm animals, the manure from which would contain about seventy-five percent of the plant food constituents extracted from the soil. If wood ashes were not obtainable, potash could be purchased in the form of muriate of potash.

Mr. Jack does not love the sparrow, and no wonder. They do enormous damage to the grain-crop when ripening; in fact, Mr. Irving, of Logan's Farm, told us, some years ago, that he had given up sowing fall-wheat, because as it ripened earlier than other grain, the sparrows from the whole district collected and attacked it as soon as it began to turn. What a cloud of the destructive wretches did we see on a fine piece of oats on the Seminary Farm, Sherbrooke Street! There could not have been fewer than 500 of them, and what they ate bore no proportion to the quantity they destroyed by breaking down the h s and straw.

UTILISATION of SURPL S FRUIT.

(By E. Dunlop.)

Variety of apples—Evaporators—Kilns Steam driers—Process of manufacture.

Outremont, December 20th 1896.

The Honorable Louis Beaubien,
Commissioner of Agriculture,
Quebec.

SIR:

In accordance with instructions received from you, to visit the Western portion of New-York State for the pur-