PAPERS ON DAIRYING.

Dairymen's Association Yesterday Afternoon.

Winter Feeding and Winter Dairying" by Mr. James R. Anderson

Other Matters of Increst to Dairymen Were Discussed at the Meeting.

Hon. J. H. Turner, Minister of Agriculture, Gives a Short Address.

The paper read by Mr. J. R. Anderson, Deputy Minister of Agriculture, at westerday afternoon's session of the Dairymens' Association, on "Winter feeding and wister dairying follows:

Mr. Charles D. Woods, Vice-Director of the Storrs Experiment Station prefaced his address before the Farmers' Convention of the Connecticut Board of Agriculture in December, 1894, as fol-

"It is said that many of the articles current in the papers upon cooking are written by people who never cooked anything, and that many of the papers upon the care of children have been written by old maids. It may be said that a man who never milked a cow in his life is somewhat presumptous in presenting his ideas upon dairy management." Now, although I have milked a good many cows at one time and another, I do not for a moment pretent to pose as an expert, and I feel that it is somewhat presumptuous in me to come before you today, with any idea of teaching you anything on the subject of dairying, and I have only consented to make some remarks on winter feeding, and its kindred subject, winter dairying; in the hope that, having access, which many of you have not, to most of the standard works and publications, on the subject of my address, I may happily supply you with some ideas; ideas of those who have made the subject a study, by no means my own; and which may have escaped your attention. If such is the case I may venture to hope that you will forgive me for inflicting myself upon you, and that some thought and attention the production of milk. In order, then may be directed to the subject of this to reduce to the lowest point the amount paper, a subject which I believe to be one of very great importance as touching should observe the following rules. the profits to be derived from dairying in general, and winter dairying in par-The sooner dairymen discover, the better it will be for them, that the profitableness of the dairy business is to quite an extent dependent upon producing dairy products at the season of the year when they bring the best prices. Owing, however, to the cheapness with which stock can be kept during the summer months, many will doubtless continge to have their animals come in, in the spring months; but the men who are making the most marked success in dairying, in Denmark, the United States, Canada and Australia, are careful to have a large proportion of their cows in full milk flow during the later fall, and

fitable results both directly and indirect-This arises largely from want of scientific knowledge bearing on the wants of the milch cow in food and treatment, as well as the plants whilst growing. Another argument in favour of winter dairying is that the care and milking of a herd of cows in full milk occurs at a time of the year when the farm hands can least be spared, when the horses have probably all they can do, and can ill be spared for hauling milk to the creamery. It is said that cows properly fed may be milked to within six weeks of calving, therefore, those cows which come in for the winter, by the time they are going off in their milk, the spring has set in with good grass, and they will freshen up with their milk, and will continue to give milk till near calving.

winter months; thus instead of foreigg

the creameries to close for the want of

milk during several months of the year,

a very little provision in the way of

winter feed makes a vast difference to

the income of those who look to dairying

for a livlihood. The whole benefits

of winter dairying are not fully under-

stood nor appreciated by farmers gen :-

rally, and the methods employed are not

always such as to produce the most pro

The subject of cattle feeding and handling stock is a large one, and only general principles can be advanced. No hard and fast rules for feeding are now known, and doubtless none ever will be known. It is, nevertheless, true that the man who exercises the largest amount of good judgment, based upon all that the most advanced science can teach him, and who tries to put into practice the knowledge thus acquired will be on the much surer road to success than one who works blindly. There may be no "best" breed, no "best" ra-tion and no "best" way of handling dairy stock, yet there are many bad sides to all these questions and man who learns to avoid the bad is well on the road towards the best.

Rations for dairy cows must very with the animals fed, the stage of lectation, the system of farming followe! and many other conditions. It, therefore, futile to speak of feeding standards and of fixed rations, the subject has been thrashed out by professional and men in all dairying potably Germany, and whilst the con clusion arrived at, is that cows require a certain quantity of food, to supply a certain amount of protein fat and car-

Read at the Annual Meeting of the | daily wear and tear; in other words to keep the animal alive in a healthy condition; and secondly for the purpose of forming milk; experience has taught the lesson that common sense must, after all, be consulted in feeding, as no two animals are constituted exactly alike. Thus whilst the German (Wolffs) stand ard for mileh cows calls for food which will supply 2.5 pounds of protein, 0.4 pound of fat, and 12.5 pounds of carpohydrates per day, for 1,000 pounds live weight, the potential energy of which is about 26,600 calories, it is found that the proportions of fats and carbohydrates are only relative, in other words, one may be diminished, and the other correspondingly increased, so as to

nake up the required potential energy. The body is constantly undergoing waste, the substance wears out, breaks down, is taken up by the blood, and removed by the excretory organs. matter thus removed must be as constantly renewed, or the animal will grow thin and ultimately die. To supply material for repairing this waste, is the first use the cow makes of the food, in words the greater portion is used for the production of heat and energy, and is, as far as the farmer is concerned, a dead loss, as he gets absolutely no return for it. To secure profit in feeding this proportion should be as small we possible, and there are two ways in which we may diminish the proportion which the food of support bears to the amount supplied. To secure profitable feeding both these plans must be used. The first is by reducing the food of support, and this may be done by protecting he cow from cold, When labor of any kind is performed by the cow, food must be burned in the system to develop the required energy. Excitement of involves

an

expenditure

energy, and must food. It is evident, therefore, from food. that in order to reduce the amount of food for this purpose, cows which are fed for the production of milk, should not be required to make any exertion which s not absolutely necessary, should not be compelled to roam over ten acre field to gather the food they should be able to get from a quarter of an acre. Net only physical energy but also digestion is obtained from food, and we can, therefore, reduce this amount of food of support by providing food whica is easily digested. This fact alone explains the necessity of providing cows with ensilage at the time of the year when there is no green feed. If the food given to the cow is dry and hard to digest, she cannot be expected to derive the same benefit from it as if it vere green food and easy of digestion, because a great proportion will be consumed in the production of energy overcome the difficulty of digestion. a cow is kept in terror or excitement, or innoyed by flies and dogs, or caused to fret in any way, there will be an extra amount of food used in the development of energy, which otherwise might go for

The cow must be protected from She must not be called on to make 3. She must be kept in a placed happy emper, free from all annoyance, excite

used, as food of supprt, we

4. The food she receives must be easy digestion. By these means, the mount of food used, as food of support will be decreased, and the proportion which it bears to the total amount of food supplied, will be decreased.

The second method of decreasing the proportion which the food of support bears to the total amount of food supplied, is by increasing the amount of food For instance, supposing supplied. low under certain conditions required 15 lbs. of hay daily, as food of support, the proportion then between the food of support, and the total amount supplied would be 15 to 15, but if 20 lbs, were eiven then the proportion would be 15 o 20 and so on up to the limit of the cow's capacity. It is then evident that

increase mount of food supplied, causes a lecrease in the proportion which the food support bears to the whole. total amount of food which can be supplied to an animal is limited by that nimal's power to eat and digest it. If a large quantity of food to contain a small amount of nutriment, or if it is distasteful, the animal cannot take a sufficient quantity to accomplish the best results. The cow must have an abundant supply of food for the maintenance of animal heat and supply of energy: and to obtain this wholly from coarse food such as straw or poor hay would require the consumption of top large a bulk of food. The cow can manufacture milk only out of the food given to her. If this food is in sufficient quantity and contains all the elements, contained in milk, the cow, if naturally fitted for milk production, can yield milk liberally; but no care in feeding, or perfection pedigree, will enable her to put into the pail material which she does not

To feed profitably it is necessary that the feeder should get the largest possible return from a given amount of It is not enough that the animal should be made to get fat or give milk: but this must be done with the smallest expenditure of food, and to understand now to do this constitutes the science of profitable feeding. To attain the greater profit it is necessary that the largest possible proportion of the food used shall be converted into milk, and the smallest possible proportion in the production of proportion shall be rejected by the anisive than is necessary for the attainment

to please the palate nor because they are roots and silage, as a part of their winter ration, and the great trouble with us is, how it can be most cheaply provided, and the question becomes of imcows for the purpose of consuming the largest possible amount of feed and converting it into the richest milk at the animal through the winter on a simple Economic Cattle Feeding Association of Central Canada:

"One other advantage of feeding ensilage has been overlooked and it is this: to know why the cows on the Tolmie By feeding cows with ensilage it is pos- estate were alive and his dead. sible to have winter dairying in our cold climate, and that means an income from our cows the whole year round. It means the possibility of feeding milkmeal per day. In feeding eighteen cows in groups of three, I did not find any gain from feeding over 8 pounds of meal per head per day, but I find farmers around Montreal feeding 12, 15 and 16 of Scenes per head per day with no more milk richer in color, but in richen in milk constituents. Thus you see with ensilage you can get more value in pro-

duct with less cost per day." I will not attempt to enter into the question of making silage, or the construction of silos; this is a subject which would occupy too much time, and after all it is a subject, a knowledge of which can be acquired at any time by reference to the many works bearing on the question and which are always available at the department of agriculture. I am also preparing a paper which will be pubfished in the next report of that department giving a description of the very latest silo in use in Ontario, with cuts and other information which I think will be of service to those who are contemplating cheap and serviceable silos. But will just give you an extract from a paper by a namesake of mine in the Tasmanian Journal of Agriculture, who, in speaking of the advantage of winter feeding and ensilage says:

"To provide a sufficient quantity good, nutritious food farmers should grow such crops as rye, oats, peas, beans, clover, corn, and make them into silage. A crop of oats that will cut three tons of cured bay to the acre will make 10 or more tons of ensilage to the acre, red clover will give 10 to 12 tons of green feed in the first cutting to the acre. I have made 200 tons of ensilage from twenty acres of land and all from one growth. In growing crops for ensilage the farmer can get from much of his Subject Read by Mr. Watson Clarke land, two crops in the one season, There are some farmers who have an idea that anything will make ensilage, such as thistles, willows, ferns and all other rubbish. But making ensilage is like preserving fruit, if we put in one kind of fruit we do not expect to take it out with the flavour and properties of

Nor will I here attempt to tell you of the relative feeding values of different fodders nor of the rations which should be fed to cows in order to supply the required quantity of protein, carbohydrates and fat for the production of milk. this knowledge is also easily acquired, but is of to voluminous a character for a paper of this description, besides which as I before remarked common sense will teach a great deal to the observant practical feeder. Still a great deal can be learned from the experiments in feeding which have been, and are being carried on, they at least teach this lesson that by generous feeding alone can we hope to get the sults from our cows. Many farmers feed their cows only a pittance above what they need for their maintenance; they fail to realize that their profits can only begin after this point has been reached.

It is frrational to suppose that a cow fed only to the limit of support can sup-The ply milk, hence it follows that one cow properly fed will give more milk than two improperly fed cows. It is well to lay to heart the saying "Ex nihilo nihil the food is course and bulky, requiring fit," nothing can come of nothing. There is one other subject which I will touch and that is the necessity of an ample supply of good water. Milk is largely composed of water (I do not mean as consin Experiment Station as follows: "Keep only good cows that respond to

feeding. Feed liberally, but not to waste. quantity of protein. Raise and feed more oats and clover:

use bran, shorts and oil meal whenever needed, and when obtainable at a reasonable price."

Note on the use of technical and scientific terms: The nutritive components of all foods are conveniently divided into three classes, known as the protein or albumnoid compounds, the carbohydrates and the fats of ether extract. The protein compounds are the principal tissue formers of the food and especially nourish heat and energy, and the least uossible the muscles and nerves, and furnish material for the casein in milk. Protein is mal unused, and at the same time that also finally burned in the body and thus the food used shall not be more expen- gives rise to energy. The carbohydrates better ours, where good care and judgand fats are the chief fuel compounds of these results. Silage must ultimately take, and is now taking, a permanent and fats are the chief fuel compounds of the food and are mainly used to suptake, and is now taking, a permanent and fats are the chief fuel compounds of the soup take, and is now taking, a permanent and fats are the chief fuel compounds of the soup take, and is now taking, a permanent of the body and provide for other It is my idea that the first thing are the formal of the body has to do. They should do would be to try and get some powent of the daily rations of the dairy cow, which is being carried to her utmost limits during the long months of

winter, and when she is shut away from may be measured in terms of potential the green crops and natural grasses, energy and the unit which is commonly In our case we lay by vegetables, fruits used is the calorie. This is comparativeand preserves for winter use, not simply ly a new term and one which I believe, we must come to be more and more highly nutritious, but because they confamiliar with. Since one of the important principles which are of the utmost ant uses of food is to furnish food for tain principles which are of the utmost ant uses of food is to furnish food for importance in the influence which they the body, it is important that we become exert over the process of nutrition and familiar with the fuel value of foods, assimilation. Now, our demestic ani- and with the calorie. The calorie is the mals, like ourselves, not only relish, but amount of heat required to raise the temgreatly need something of this nature, perature of a kilogramme of water (2.2 pounds or thereabouts) one centigrade. It is practically the same amount of heat that is necessary to raise a pound of water through four degrees Fahrenheit perative and paramount importance to From practical experiment it has been the dairy farmer who is keeping his found that a pound of protein, or of carbohydrates, yields when burned about 1860 calories of potential energy, and that a pound of fat yields 4,220 calories lowest cost. It is one thing to carry an | In other words the fuel value of a pound of protein or of carbohydrates is about maintenance, but it is a very different 1860 calories and the fuel value of a thing to crowd into the cow all that she pound of fat is 4,220 calories. It will can possibly eat and convert into milk. thus be seen that for purposes of fuel Professor Robertson said in his address a pound of fat has about two and one to the convention of the Ensilage and fourth times the value of the same weight of protein or carbohydrates. Mr. McRae then again interpolated

his question as to his cows. He wanted He was again ruled out of order Mr. A. A. King, of Ladner's, said in discussing the paper read by Mr. J. R. Anderson that this province is better ing cows with not more than 6 pounds of fitted for winter dairying than any of the other provinces. Nature is kind to British Columbia, as we have no cold weather as they have in the East. He advised that farmers make nearly as much butter in the winter as they do pounds per head per day, an extra cost in the summer. If they did so they

bulky foods; grass and other coarse to be good. foods pass into the first stomach and

saliva it passes into the final stomachs and is finally digested. Mr. C. A. Wells, of Chilliwack, said were unhoused they would not do wall. Good ventilation was also necessary to

R. M. Palmer said oat dust, a by product in the manufacture of oatmeal, he spring commences early, and the sheep found to be a valuable food in addition can be kept outside most of the winto other foods for cows. It was exceedingly palitable

A. A. King said a great deal depended upon the palatibility of food. Mr. Collins, of Salt Spring Island, also on the land that leaves as much or as spoke in favor of oat dust as a food for

MIXED FARMING.

Yesterday.

"In preparing this paper on 'mixed farming' L have been as brief as possible, explained Mr. Clarke, in his introble, explained Mr. Clarke, in his intro- the matter of sheep breeding, and we ductory remarks, "and I have left the must commend them for the labor, ensubject as open to argment as pos- ergy and spirit they display in buying another, so with ensilage we take no sible, for it is one that embraces a very up the best rams they can obtain and feed value out of the silo that we do great deal. It is, in fact, inclusive of doing all they can to improve the quality of their flocks. It is a step in the of farming, such as the systems breeding and rearing of stock of all kind, the growing of cereals and green their labor and outlay. I am sure we crops, and the general cultivation of all all wish them every success. The wild classes of land. Mixed farming may be animals and too many dogs are the termed to a farmer, not carrying his great drawbacks for the sheep breeders. eggs in one basket, or having more "I must not forget that most importstrings to his bow than one. For when ant animal the pig, because if you do he has all kinds of cattle, grain and not keep swine on the farm a great deal produce, he ought surely to have some of feed, which can be given to nothing ket: and therefore he has a better these times we cannot afford to throw chance than one who goes in for but one anything away. The pig is best adapted kind of produce. I believe, however, for the smaller farms and milk selling that on every farm, large or small, ev dairies, where you have not sufficient ery farmer should have one or more milk for feed for calves regularly. I specialties, and on large farms have as consider the pig a market at home for many specialties as possible. It is my everything which cannot be sold else belief that a man ought to stick to his where. I say keep him and he will specialties and not turn first to one bring his recommendations with him. thing and then to another just because some article happens to make a little land, I will not take up much of your ly always happens that if any article as I think the best methods of growing makes a good price one year, before them are very well known. One thing three years are over the same article is I must say in regard to them and all over-produced, and of course there is no other crops plow deep, plow well and come; take wheat at present as an ex-

ample "On a large farm we expect to fin! upon in connection with winter feeding all kinds of stock, horses, cows, sheep, and pigs. We will take the horse firstas on every farm he is indispensible. I think that on a large farm it is the day t is a matter of paramount importance his own horses, taking care always to that cows should at all times have ackeep the very best of his mares for cess to water, and it is of equal import- himself for breeding purposes, and not ance that the water should be free of to dispose of them because they happen taint, or the milk, which is well known to make a little more money than the to be of a suspectible nature will certain- worse animals, as the best come from be contaminated. The whole matter the best, or like produces like. I need is summed up in Bulletin 33, of the Wis- not make any remarks as to the feeding of horses, as almost everyone who possesses one has his own way and as a general rule will look well to its feed and comfort. Only as to the younger Select feed stuffs as will supply a fair animals I would say that they require more attention than is given them, especially in the winter season, for if they are given plenty in the summer, and then are starved in winter, it is like putting money into the pocket at one time and throwing it away at another-it will leave you no better in the

end. "In touching on the cattle, we will take the milch cows first, and I must say that the class of cattle we have on Vancouver Island is not at all creditable, and I think it is the duty of every one concerned to try by all means to see the country or the climate that can ment are used-in fact I am surprised

good general purpose animal, one that, the land is not as likely to dry out should she fail in the dairy, could easily disposed of to the butcher, and I wish to say that the dairying part of the business is only part of the profit which ought to be made from the cattle. Sup- Is timothy alone the best to sow? posing you have a farm on which you keep twenty milch cows (milk-selding keep all kinds of stock, Timothy gro dairies excepted), I would expect to but one crop a year and is nothing see say from twelve to fifteen calves reared every year, and easily raisel without purchasing very much food for

"I would recommend that the calves have new or whole milk for at least three weeks; the next week half new and half skimmed, and then they ought to be strong and healthy and able to get along with skimmed milk alone. Or if you want to make them extra good, it is as well to make a little gruel of linseed or oat meal, to be mixed amongst the milk when hot, to warm the milk, as it is then not as liable to produce colic or scour when fed. Such feed should not be dispensed with until the calf is from six to eight months old at least. They ought then to be well cared for till they reach the age of twentyfour or thirty months, at which time they will produce a calf and go into the dairy. And now comes the time that a farmer makes something from his stock for say that only ten of the lot come all right into the dairy, he will have a like number of his older stock to sell out and ought to make a good price to the milk selling dairies or to the butcher "In my opinion, choosing a good dairy cow is as easy as anything that there is to do on a farm. The first thing to do

is to examine the udder, and if it is a proper shape and size and the teats are in a right position you may be sure that there will be no wrong in buying her would get a better price. Cows, he Some one will ask what is the proper of Steenes per nead per day with no more infile freed over thought, have never been given proper shaped udder. See how they are pictured or meabines day we make the care in this province. They should be tured in the agricultural papers; you will be the care in the agricultural papers; you will be the control of the province of the care in the second of the care in the care in the second of the care in Hast, since the cold rains here are more behind with teats set on square, not injurious than the heavy troots, in the pointing forward but hanging straight East, Ensurage be considered one of the identity of even a little backwards. Of foods that should be fed to cows course, you have the animal to look at; Feeding middlings to cows was injure she may be large of small, rough or a A cow has four stomaches; in he beauty, but if her tidder is not deformed first is a large reservoir for holding her dairy or milking malities are sure "On mixed farms we expect to find a

then being brought back into the mouth flock of sheep, too, and if they be of the are chewed again. Then with increased right kind there is nothing on the farm that will pay the same profit for the amount of labor and the feed they consume. I have heard it remarked that cows must be well cared for; if they this island is not adapted for sheep, but I wish to contradict that flatly, as the climate is good, the land sound audkeep them in good health. Cows must dry, excepting a few swamps and low-also be kept in a good temperature. As places (and they might be easily drainto mixing grain with bulky foods, the ed), and from the flocks I have exambest system he knew of was to mix ined I have found the sheep to grow to grain and ensilage and straw or hav. a great size, with a good quantity of Straw was very valuable for winter mutton and wood. There is please of mountain or upland on which the sheep can graze cheaply most of the year, the ter. All the land at the foot of the untains is good for wintering the sheep and also for fattening them and their lambs. There is nothing that foods lambs. There is nothing that feeds

good manure as the sheep.
"Where sheep are kept, I think the fat lamb comes in first of any crop and always commands a ready market becourse the butcher finds that lambs taken direct from their dams and slaughtered are a much better quality than those that have left their mothers a week or more, or say, the imported ones. I am pleased to say the Vancouver Island Flockmasters' Association are taking up right direction a few years they will be rewarded for thing which will command a ready mac- else, otherwise would be lost, and in "In regard to the cultivation of the better price for the time being. It near-time on the growth of wheat and oats and a suggestion upon which

demand for it. Stick to your special- sow as early as possible. It is a well ties and depend upon it your turn will known fact that in dry climates it is come; take wheat at present as an exhard. As to the growth of barley, see Now, in looking over what the Do ing there is so little grown on the is- ion parliament are doing away land, it is and should be considered one east, to help the eastern farmersof the best paying cereals on a runt is subsidizing fast steamers for of the large quantity required for malting, its quick growth and heavy yield, and even starting them stores in it is supplied to town consumers), and of every farmer to breed and rear all I am somewhat surprised that we lo land for the sale of their goods not have any malt kilns, as I am sure should think it would be as little that the amount of malt used in Victoria alone ought to keep one going and be a paying concern. It seems to me a few thousand dollars expended to be a case of no barley no malt kinls them and in placing them in differ -no malt kilns, no barley. It is not because the barley grown here is not good, I have seen samples grown at Saarch would be money very well expende really first class for malting purposes. Barley on the lighter lands is, really good change of crop for the land. instead of growing oats year in and year out as I have often seen done. "Seeding down land for hay or pasture is one of the most difficult parts of work on the farm, mostly on account of or a bull, and allow everyone the

the very dry time we have in the of them for a very nominal charge months of July, August, September and months of July, August, September and sometimes even in October. The young plainty see that farmers, like the plants cannot stand the very great of people, will have to combine change that takes place in being shel- stand shoulder to shoulder and wor tered by a heavy crop, which when cut harmony instead of being broken ulays the plants open to a scorching sun. to all kinds of factions, and I was It is one of the big items of expense on a farm and when we have to sow for and if you think I am right, why two or three years before we get a catch it throws your rotation all out of improve. We cannot blame either the order. It is a subject that requires land or the climate; for I have yet to great study. I always find it a good rule to follow nature as closely as possible and I would like to ask has any will excuse me. I have refrained one tried to grow grape seed as soon as the grain is taken off, because all the seeds that ripen and drop before the first rains, come up and go on well.

For my part, I recommend that the land that is to be seeded down ought to be after green crop, so that when you have worked and cleaned the land well and killed all the wild grasses, the seeds sown have the best chance and

when only ploughed out of stubble Sow plenty of seeds and be sure the they are good. While I am on subject, I wish to ask this questic say no; not on a mixed farm where your cattle in the spring or fall recommend those who keep stock to a mixture of Italian rye grass, red er orehard grass and sow this with a little timothy, so that you have early grass for your lambs, and after you have taken your crop of hay have a good bite your milch cows or any other stock. those who go in for selling hay, grow flmothy, of course. "Now I come to what I consider

of the most important subjects of m

ed farming—the growing of root lero Potatoes are always a staple crop, a when too cheap and plentiful for market are first class for fattening tle or producing milk, or for the maki of first class bacon. Till last year tatoes have been free from all but last year I was sorry to amount of damage done by a black beetle, or fly almost like the l black turnip fly, which eats all leaves. Then the tops went down died, and I give them more credit spoiling our crop than the dry weather Turnips cannot be recommended on count of the destruction caused by green fly or aphis, and Lam sorry to s that that useful vegetable, the cabb had the same enemy, but I trus will leave us soon and forever. roots I recommend are the carrot the mangold, as they are heavy co pers, and as yet free from all pests. every farm there ought to be a la quantity of roots grown. They are most useful kind of feed grown for ter and spring. Where a flock of sh are kept nothing equals them, and must tell you if you have any land the wants manuring, why, put on you sheep, feed them roots, and you soon see the result. What have better than a few carrots for your mi ing stock or vour horses? But w you will find roots the most useful amongst your young stock and dry tle. You can feed them roots and straw and bring your cattle throug winter in good shape, and you will also make a large amount of good manure to improve your farm.

The most disheartening part of farm g comes after you have worked. I me almost night and day, to get cattle into shape for the market, grain and produce ready for the cons How many here have been di ers. appointed after working hard a who year to make something nice and good and, when taken to city or market.

be told by the middlemen or shopke There is no demand for it, worth nothing, but out of pity's and as you are a friend I will give v so much for it.' At the same time expecting to clear more for selling once than you get for growing, prepa ing, carrying and also selling it once 'The remedy for this complaint is for

the farmers to combine, and I am sur if they will look around they will se they have it in their power to do Look at the fine market hall, which a the present time is a white elephant our city authorities, its income bare paying for one man to attend to it. am sure the city would be only too g to rent it at a nominal rent. Now, the farmers would combine and r this place they would have every oppo tunity of placing everything they gre direct before the consumers, and on t point we might be able to turn to profit what has hitherto been a loss think you will agree with me that the oggos of one thing or which under present conditions, cann be helped, could by having a market your own be turned into a very nice n fit-I mean all kinds of small article which will not pay to take to town s arately, which could be easily sent under combination rules, for you all see that if one wagon could colle and take articles say from ten differen places instead of hitching up ten team there must be a considerable savin Our friends the fruit growers did try make a start of something of the and I am sorry to see they did no on with it: at any rate I consider subject we might all take into cons ation and discuss, and if it is considworth while, why let us combine once. "Before I finish I may perhaps be

owed to make a few general rem

you will all agree with me. A rops up. How are farmers to really good bred male animals of I have spoken before? We all that it will take more money than ordinary farmer has to spare. the enormous cost of carriage ing their goods, providing cold st they could do to help us to get in class male animals, and I am sure parts of the province, so that all farmers might have the use of think it would be a more profitable sensible plan than spending so money on one or two experim farms, as then everyone would have chance of improving his stock. sure there are plenty of farmers would undertake to keep a stud

advise you all to weigh this matter mence at once. I must ask forbearance from you all as think the farmers are expected first class writers, and if I have made the address as it ought to be

The chairman then salled upon Premier, Hon J. H. Purner, whe present for a few remarks. Mr. Turner said that the paper

Watson Clarke just read was very good one. As to the two grants of \$1000 to the Fruit Growers and \$250 the Dairymen, the Fruit Growers was the first in the field and it was felt that as much assistance should be given them as possible. During the last few years it has been proved that we ar oming to the front in fruit growing Mr. R. M. Palmer, the fruit inspector ficient work, he thought, had a goo deal to do with this. He did not want to apologize for the smallness of th grant to the Dairymen. Attention had een called, he understood, to the lac of interest taken, and whether the gov nt would, on the recommendation the association, increase their grant ne could not say; they would favorab consider it. He spoke of the advisably of forming a farmers' institute ake in hand the work of the vario associations. In Ontario, where fift members could get together at 25 ce each a year (he thought this might be creased here), the municipality con butes as much as the members have the government as much as the mu pality and provides lecturers app

Information was given in in a very good and cheap form. thought it could easily be introdu Harmony between the two sociations could be arrived at in way. He should like an expression opinion on this subject. The ma session and if an application was man the fliding it would receive favoral consideration, as the revenue of the province had been increased and the ould afford to be liberal. He could promise, however. It was the intention of the government, he said, to brid forward sufficient public works to deve op the farming as well as the minim communities. Agricultural societies. considered, should act more conjoint and combine in the holding of the shows. Victoria and New Westminste should combine the grant and hold

ning to the various branches of fa

show alternately. Mr. Ladner said Hon. Mr. Turner served great credit for coming to the meeting. He reminded the Prem'e that the Delta creamery produced but ter and cheese last year valued at \$15,000. The dairying industry, he though should be supported by the governm as well as the fruit growers. Mr. J. R. Anderson said that the was a strong feeling throughout

country in favor of amalgamation he shows. Secretary Hadwen said he was t that in the neighborhood of Surrey any one could drive in one afternoon to least three or four of the shows. spoke in favor of the institute schen

and of the advisability of having a ce tral show. Mr. Watson Clarke said that he con sidered that judges at a show should go around and show things. He did n believe in having horses races, etc., a show. It should be held only for

dustrial purposes. EDUCATION OF COWS.

An Interesting Paper on This Subject by Mr. King.

This was the title of Mr. A. A. King's We often hear from patrons of the

creamery," said he, "that there is n profit in dairying-that it costs too much to produce a hundred of milk or a poun of butter, or butter fat. Others again are satisfied because they are making money out of their herd. When we hear the different stories told by these conle patrons of the same creamer enjoying the some advantages, the on becoming tankrupt and the other rich we naturally want to find out the rea sons thereof. And on investigation w find one man well versed in his bu ness and the other ignorant, opposed new methods and theories, 'unwilling change to suit his old cow.' We find or herd of selected cows with a pedigre based on their milk and butter produc tion; we find the other herd made up cows, that have never been tested in way, but simply kept because they pen to be cows or heifer calves. orings me to the first great need in dairy line in this province and that the practical application of the Babe tester to the dairy herd.

"The market prices are beyond o ontrol, but we have control of our ow ost of production, and to this alone d ve look for profits. The herd, then, mes the whole foundation of the dair siness. Much, of course, depends ow we feed and care for our cows ut no amount of feed and care wil ake a cow whose capacity is only 12 ounds of butter a year a profitable w. Every dairyman should establis standard of his own, which is adapte his particular conditions, and ever that does not come up to that stand

should be sacrificed. "In calculating your standard of pro ableness you should take into considation the cost of feed, labor and in rest on the investment of the cow et us calculate a standard for an ex ple. We will suppose that it cost \$40 to feed a cow for a year; \$10 for labor and \$2.50 to pay interest. We bor and \$2.50 to pay interest. ow have about \$52 charged up against cow. Now, what have we to put of other side of the account? It is in to be seen that the 120 pound cow not in the race, as her butter would ave to sell for 40 cents a pound to make profit.

We will allow \$10 for skim milk and for manure, which will leave \$37 to paid for by the butter. Supposing we made as much butter in the win as in the summer and getting on an rage from the creamery 21 cents per nd, we would have to make about pounds to come out square. So you that there is no profit in a 175 cow, neither is there very much

a 200 pounds cow. Now, why do we keep such cows as We do not keep a servant long would only do enough to pay for poard, and why should we keep a The reason is that we do not know d do not take pains to find out which ws are profitable and which are not. leve that three quarters of the cows in this province are actually runheir owners in debt. There is for this in these days of the ters in these days when scimade it possible for the dairye complete control of his busi-No other business man would nethe opportunity of avoiding loss