

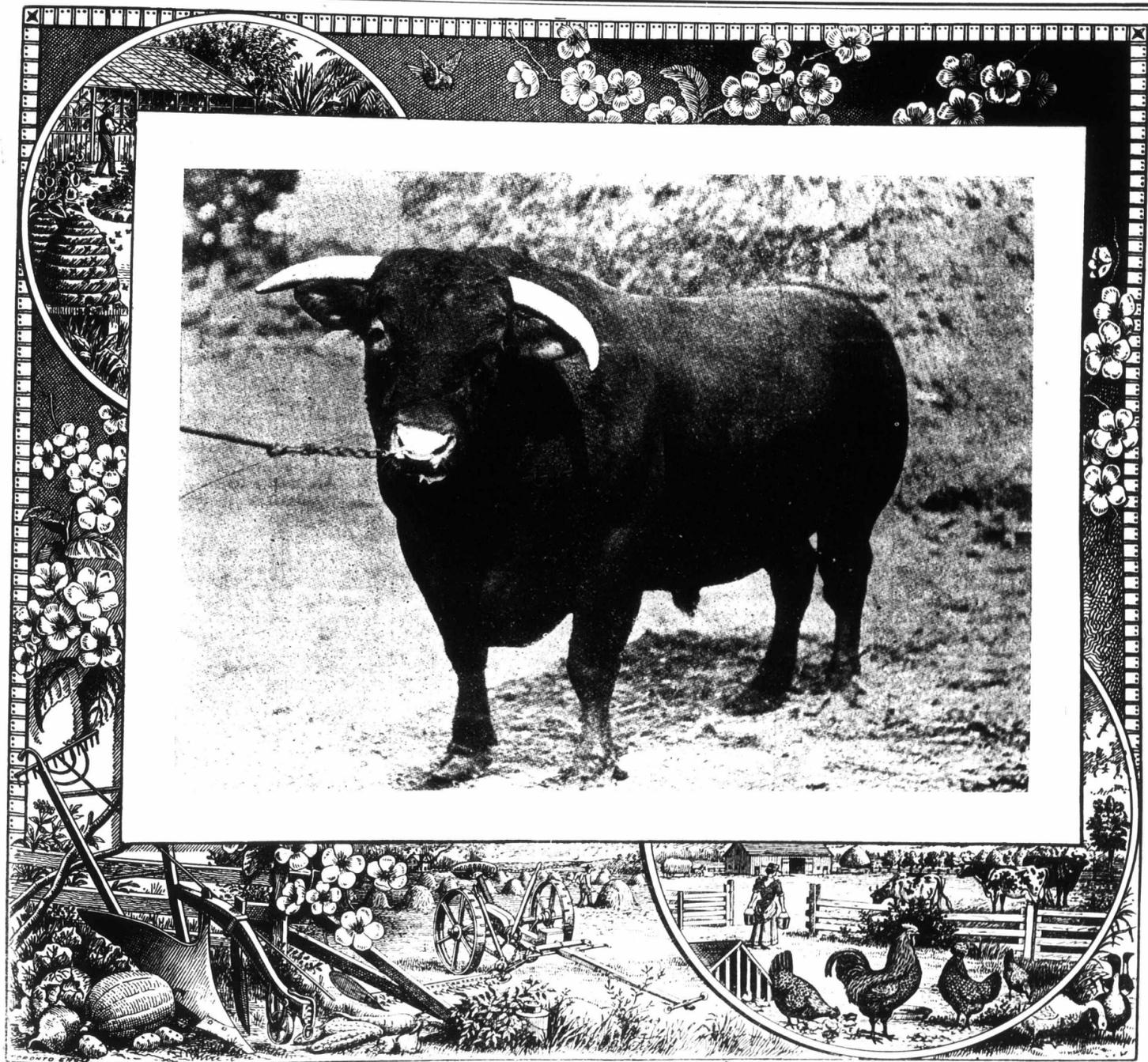
THE FARMER'S ADVOCATE

AND HOME MAGAZINE

PERSEVERE AND SUCCEED
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* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.*
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A TYPICAL SUSSEX BULL, "SARACEN 2ND" (1445),
 BRED AND OWNED BY
 P. E. R. SALLARD, BUCHAN HILL, CRAWLEY, SUSSEX, ENGLAND.

EDITORIAL.

SPECIAL FEATURES IN THIS ISSUE.

- Development of Australian Butter Dairying.
 Letter from an Ex-Student of the Ontario Agricultural College.
 Agricultural Depression Discussed by the British Association.
 Wheat Growing on the Farms of India.
 Swine Fever—Its Nature and Suppression.
 A Warning to Canadian Authorities.
 The Production of Milk for Winter Buttermaking (first article of a series).
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 Fighting the Fall Canker Worm.
 Breeding and Feeding Beef Cattle.

Prof. Jas. W. Robertson, Dairy and Agricultural Commissioner, will leave Ottawa about the middle of November for the Northwest, to inaugurate next season's dairy work there.

Madison Square Gardens, New York, from Nov. 23rd to 28th, will be the theatre of the second annual exhibition under the auspices of the National (U. S.) Association of Exhibitors of Live Stock. It will be a popular event.

The *English Live Stock Journal* states that the recently reported outbreak of pleuro-pneumonia in Argyshire is under careful investigation. We trust sincerely that this dreaded cattle disease has not now a foothold in Britain.

At the last show of the Royal Agricultural Society, at Flemington, Australia, one of the innovations was a small field-ambulance establishment, in charge of Dr. A. Lewellin, honorary surgeon of the Society, who was in attendance, to attend to any casualties that might occur in the high-jumping and other attractions.

The United States has authorized a trial of rural free delivery of mail, and the P. O. Department will establish the experimental service as rapidly as possible in thirty different counties, starting in Jefferson Co., W. Va., of which Charleston is the county seat. From that point mounted postmen will deliver mail to farmers residing within a radius of three and a half miles from the city limits.

We complete in this issue of the FARMER'S ADVOCATE, Mr. J. S. Larke's excellent review of the development of Australian butter dairying. He takes up several points of present practical interest to Canadian dairymen, such as the construction of the favorite package for shipment, methods of packing, the use of preservatives, etc. It will be an eye-opener to many to learn that Melbourne has a factory turning out about 17,000 pounds of butter per day, which they are enabled to do by means of the cream station system.

"The three R's" once constituted the ideal of common school education. An English M. P., Mr. Victor Cavendish, owner of the Holker estate, in an address at North Lonsdale recently, said that: "In these days when there was so much talk of agricultural depression, he felt it was the proper thing on his part to go in for the three S's—Short-horns, Shires, and Shropshires—and he hoped the farmers of that district would always find at Holker the best types of these animals as a means of improving the stock of the district."

The Duke of Westminster has opened the new agricultural and horticultural school established by the Cheshire (Eng.) County Council, at Holmes' Chapel, near Crewe, at a cost of nearly £10,000. The pupils are received from the age of fourteen years upwards, and the complete course extends over three years, no pupils being taken for less than one year. The work is arranged so that the mornings are devoted to school work and the afternoons to practical work on the farm or in the garden. Every student is compelled to take part in every operation and kind of work presenting itself in the course of the year.

The Sussex Breed.

The Sussex breed of cattle, a representative of which is portrayed on our front page, is not as yet commonly known in Canada or the United States. Their first introduction into America was in 1884, by Mr. Overton Lee, of Tennessee. They have, however, for some five years been represented at the Ontario Agricultural College by a male and a few breeding cows. While some obscurity hangs over their origin, it is supposed that they are closely associated in ancestry with the Devon. The West Highland and Hereford breeds are also claimed to be allied to them in origin. The breed, as it now exists, bears a close resemblance to the Devon in color and conformation, the difference being a greater strength, size, and coarseness, especially in the limbs and horns. The size of the horns of the illustrated specimen is exaggerated by the position of the animal when being photographed. Their breeding is largely confined at present to the English counties of Sussex, Kent, Hants, and Surrey. It is only during recent years that much attention has been given to their improvement, although the Sussex herd book was established in England in 1800. As dairy cattle they have little or no value, but for beef production they hold a fairly creditable standing, as bullocks of the breed have scored well at the Smithfield shows for a number of years.

The bull represented is Saracen 2nd (1445), bred by and the property of Mr. P. F. R. Saillard, Buchan Hill, Sussex, Eng. He won first prize and championship at the Tunbridge Wells and S. Eastern Counties Show in 1896. Our illustration was reproduced from a supplement to the *Mark Lane Express*.

Swine Disease -- A Warning!

A special feature of our Veterinary Department in this issue is a digest of the discussion on "Swine Fever—Its Nature and Suppression" before the British National Veterinary Association recently. As we understand it, swine fever is a germ disease caused by a microscopic bacillus, the general nature of which was presented in the Veterinary Department of our issue for October 15th; and, further, that it is analogous, if not identical, with the hog cholera of America. The English authorities have spent over \$800,000 trying to stop the disease and their efforts have been a failure, mainly because proper measures have not been rigorously enforced. During forty weeks of this year there were 4,431 outbreaks, as against 4,603 last year, and 65,077 pigs were slaughtered, as against 44,667 in 1895. The *Breeders' Gazette*, which speaks authoritatively of Western States live stock matters, says there may be States in the Central West where the disease is not rampant, but it does not know of them. Scarcely a State fair ground has escaped an outbreak this fall. The devastation is widespread. A bulletin from the Indiana Experiment Station states that that State lost 580,260 hogs, entailing a loss of over \$3,000,000, last year through hog cholera, and the disease is well disseminated in the State now. Multiply that by half a dozen States and the total is appalling.

Last year an outbreak appeared in one corner of Essex Co., Ont., where it was thought in some way the germs arrived via the State of Michigan. Lately several cases reappeared there again, and during the past season there was an outbreak near Toronto, believed to have originated with store hogs from the Essex seat of infection. Judging from the arraignment by the National Veterinary Association of the inefficiency of measures taken by the British authorities, and the terrible losses sustained by Britain and the United States, the question arises, Is Canada taking proper measures to nip this thing in the bud? Certainly what has been attempted has not yet been completely effective. Has veterinary supervision been sufficiently constant and vigilant? Have the movements of swine from the infected area been properly restricted? This is a most important point. What disposal has been made of the carcasses of slaughtered hogs, infected bedding, droppings, etc. The authorities could better afford at the outset to kill and destroy every infected hog and pigsty in the county than let the disease spread. Prof. McFadyean confessed his inability to say how long the germs might lie dormant. Slaughtering, disinfection, and isolation are all necessary. In England a pigsty repairer carried the disease germs a long distance, causing another outbreak. Our authorities cannot afford at this stage to permit any laxity. Incidentally, we would point out that any relaxation of international quarantine whereby U. S. hogs would have unrestricted access to Canada must be considered

entirely out of the question at present. Canada's swine industry is now in a most prosperous condition. Our breeding herds are among the finest in the world, farmers are becoming adepts in raising and feeding the modern bacon type of hog, and Canadian hog products rank high in England. To imperil this position by any sort of negligence would be a calamity to the farmer.

Every person who buys feeding or breeding hogs should see that they do not come from the infected area, and purchased pigs should be quarantined in some isolated part of the farm till all danger of the disease developing has passed. In case of an outbreak, an important measure in reducing the loss is to provide proper shelter, as all hogs with only a mild attack, or having apparently made a recovery, may take a relapse if exposed to a cold rain or a sudden change to rough weather, which is liable to set up pneumonia. Any shed which will keep off the rain and break the wind is sufficient. The floor should be dry, but little bedding is needed, and that renewed frequently. Burn all litter and bedding once a week. Keep the herd divided so that crowding is impossible. A straw-stack is the most unfavorable place that can be provided for sick hogs. The essentials in prevention are good food, pure water, and clean, dry quarters.

Why Have We Low Prices?

This question has often been asked and endeavored to be answered during the last few years, but perhaps a more favorable opportunity of considering the cause than at the International Agricultural Congress held at Buda-Pesth, Hungary, from Sept. 17th to 20th inst., has never previously been presented. Upon this occasion some 210 delegates attended, representing practically every European country, and foreign agricultural societies, besides representatives from America, Australia, Brazil, Argentina, etc. The Congress was divided into three sections: 1st, Production; 2nd, Options and Futures; 3rd, Currency.

With regard to the subject of production, a few men claimed a belief in overproduction, but a large majority held that there is not at present an overproduction of wheat. In Section 2 there was an animated discussion of options and futures in wheat-selling, in which a large proportion of the delegates expressed a belief that the speculation on the wheat markets (stock exchanges) was injurious to the interests of producers, and that legislation should be invoked to check it. In Germany there has been already a law passed, to come into force next year, prohibiting speculation on the corn market. In Hungary this subject has been taken up vigorously by the "Agrarian party," who are now energetically pressing for legislation on the subject, and, indeed, it seems to be arousing a remarkable amount of attention in many parts of the Continent. It is asserted that the outcome will be that Hungary, and possibly Austria also, will issue a special commission upon the subject and have it fully threshed out.

In the Bimetallic Section there was a strong muster of bimetallicists, certainly possessing a majority of the members, who claimed that the opinion against the overproduction theory held by the majority of Congress is favorable to them, and further, that the advantages of an international system of bimetallicism, if it could be secured, are not denied.

Within certain limits, it would seem that the big operators in grain and other food products are able to manipulate prices, by their fictitious dealings, so that even when prices do go up the grain-growers get no advantage; but in the face of a general and unmistakable shortage, prices will rise, as has been the case with wheat during the past two months, while yet a considerable portion of the 1896 crop is still in the hands of the grower.

The O. A. C.

We give space with pleasure to a letter received from an ex-student of the Ontario Agricultural College at Guelph, in which he very fairly sets forth the merits of a course at that Institution, which, all points considered, ranks higher than any other institution of its kind, we might safely say, in the world. Especially is this so in the intensely practical bearing of its equipment and work. It is gratifying to know that its present prospects are most encouraging; the attendance now being considerably in advance of last year and above the average. There are some seventy new men taking the first year's course. Those who desire yet to begin the course for this season would do well to lose no time in communicating with President Mills. With the reviving spirit of farming, we would expect soon to hear of the College being overcrowded.

Wheat Growing in India.

Mr. R. Maconachie, now a resident of Canada, but for some years on the Civil Service of India (from which he is now retired), where his duties brought him directly in contact with agriculture in the great Punjab (or Panjab) district in North-western India, contributes an interesting article to this issue. We might add that in 1894 the wheat supply of India was 258,459,000 bushels, or about half as much as all North America. Irrigation and cheap labor are the secrets of the Indian wheat industry. Mr. Maconachie's letter is a revelation as to the primitive conditions under which wheat-growing is carried on. This season, however, crops appear to have been a failure, as wheat is now being shipped there from California, from whence it is going to Australia as well. The silver question has also its bearing on the situation in India.

Cultivation of the Mind.

To cultivate the soil successfully it is necessary to cultivate the mind. Good agricultural literature in the form of papers and books, is an essential part of farm equipment of to-day. This subject was admirably presented in a Farmers' Institute address by Mr. D. Z. Gibson, of Haldimand Co., Ont., who, by the way, is a graduate of the Ontario Agricultural College, where he earned gold-medal honors. His remarks were highly appreciated by all who heard them. We are pleased to observe that Mr. Gibson went further than to simply urge mental activity and improvement in order to secure food, clothes, and a competence—"the bread which perisheth"—and he would have his hearers so im- prove themselves that they may be equipped for the higher duties of life. A young man can make no greater mistake than to suppose that a school course completes his education, because it is little more than the foundation of it.

"We talk," said Mr. Gibson, "about the wonderful progress made in the sciences the last few years, and marvel as to what will come next, but if we turn to the life and work upon the farm we see equally as great development. The progress has been as rapid and as wonderful in its way as in any other line, and it is only beginning. It is an age of progress, and the keen competition is compelling the farmer to adopt new lines of work and also to put more thought upon his work. It is noticeable to one moving among the farmers, that the observing, reading men are the ones that are the most successful to-day upon the farm. Physical strength is not an item of so much importance to-day as it has been in the past, and as its importance has declined the necessity of greater mental strength has made itself more and more apparent. Every farmer knows that if he is to keep up the productiveness of his farm he must feed and cultivate the land; so, too, he must feed and cultivate his mind. If fed on the light, trashy literature of the day, he need not expect a development that will be of service to him. All know that there are certain conditions for successful growth, whether of vegetable or animal life; so, also, there are certain conditions for growth of the mind. One of these is the power of concentration; i. e., the ability to gather the faculties of the mind together and hold them on one subject, to the exclusion of all others. Another is the power to sift and classify thoughts and ideas and arrive at a clear understanding of any subject; and is closely associated with the power of judgment or discrimination. The power of expression now comes in, and by it we can make known our ideas to others. If a man cannot collect his thoughts and keep them on one subject he cannot expect to retain what he has been reading. If he reads for pleasure only and does not try to retain what he does read, he will lose the power of retaining anything he would like to know. He makes a riddle of his mind. Light, trashy literature sifts through and nothing is left. How can he sift and classify knowledge that he cannot retain?"

"There is plenty of opportunity to cultivate and develop the mind. The long winter evenings give a splendid chance to gain information and study the work of the farm. The farm journal brings news of various kinds that needs to be sifted and the good for the particular case taken out and applied. The Farmers' Institutes offer another source of information, and again the knowledge gathered requires to be sifted and adapted to particular cases, calling for judgment of no mean order. The College at Guelph offers another source of improvement. The many good books printed upon farm topics offer another opportunity to those interested to gain information on subjects that interest them. These books are written by practical men who know what they are writing about, and we cannot afford to cast them aside as useless. "The home is ornamented to make the home-life more enjoyable; so too should the mind be ornamented by choice literature, good poetry, and sound prose.

"In the competition that is now going on the man possessed of the required knowledge will out-strip the one not having it, and as the days go by the strife will become more and more unequal between the farmer who knows and the one who does not know how to keep abreast of the advance in agriculture."

Advantages of the Ontario Agricultural College Course.

To the Editor FARMER'S ADVOCATE:

SIR,—A recent letter received from a fellow-graduate of the Agricultural College, Guelph, referred to the fact that the College was almost full of students at the beginning of the term which opened October 1st. This was particularly gratifying to me, especially when the remark was made that almost the entire number of new men were farmers' sons, most of them from Ontario Province. Having put in three sessions at that valuable Institution, I feel like congratulating every farmer's son who avails himself of the opportunity of securing as much as possible of what that Institution has to offer in a one, two, or three years' course.

Is it not a matter for wonder, however, in these times of keen competition and growing appreciation of agricultural products of a superior quality, which cannot be produced profitably without the exercise of keen discernment and scientific knowledge, that from this excellent Province of Ontario, with its intelligent rural population, not more than from forty to seventy new men come up from year to year to take the course, at once so practical, yet scientific, that is offered under such favorable conditions at that Institution? It is gratifying to observe that the old-time prejudice against what is called "scientific farming" is giving way to an appreciation of it; in fact, it is being found out by experience, which teaches, that slipshod, indifferent methods can no longer succeed in providing a farmer with a livelihood, except he is already in possession of a substantial backing, which is seldom probable with such men, except through inheritance or a wealthy marriage. These conditions are not for the masses, however; so it becomes us to meet the conditions of the day in a conquering spirit, accompanied with an understanding of the working of nature in the things with which we have to deal. I assume that no reader of the FARMER'S ADVOCATE will take exception to the term "scientific farming," because that is only farming in accordance with the divinely implanted laws of nature, so that, in reality, if a man is not a scientific farmer he is not a good practical farmer.

Now, since the inception of the College it has ever been the effort of the Agricultural Department to equip the Institution with men and appliances in the best possible manner to meet the requirements of the times. To say that admirable success has been attained in that direction is to put it very mildly, because this Institution is looked up to as a model, viewing it from a practical standpoint among the other agricultural colleges of the world. The truth of this statement is borne out by the fact that students find their way to this College from very many foreign countries where good agricultural colleges exist, viz., among others, Great Britain, Poland, Spain, New Zealand, and the United States of America. To say that a course at this Institution is valueless or even indifferent in its worth to one who intends to follow farming is displaying ignorance of the grossest sort. Of course, a fool could not be given brains within its walls, nor an indolent student industrious habits (though example there should be a check to laziness), but an industrious son of a progressive farmer, having ordinary intelligence, cannot fail to receive with his diploma or degree that which will make him a wiser, better, broader, and, therefore, more useful member of society, and also develop his capacity for greater financial success in his favored pursuit. This I can say with becoming modesty, along with very many more ex-students, without fear of successful contradiction. For the information of young men who have never visited the College or received a College circular, I will refer briefly to some of the many lines taken up. The whole subject of agriculture receives detailed attention. Rotation of crops, fertilization of land, drainage, green manuring, catch crops, dairying, bee-keeping, etc., are all made clear and easily understood. With regard to stock, one has an opportunity of familiarizing himself not only with some ten of the best breeds of cattle, nine breeds of sheep, five or six breeds of hogs, but also all the best breeds of poultry for the farm. The feeding and care of all these animals is skillfully taught, as well as a practical veterinary course given, a knowledge of which every keeper of stock should possess. Speaking for myself, I have no hesitation in saying that the training there has been of immense advantage in relation to actual farm management and work.

When I think of the comparative few who yearly come up to the Agricultural College for instruction, the reason for such is not easy to discern. The stringency in the times, no doubt, has much to do with it. For while the cost of the course itself is very meager, the supplying of a man in the place of the would-be graduate is not so cheaply disposed of. In the case of large families of boys, one can be spared at a time without serious inconvenience, especially when the whole business of the others is to be benefited by his taking the course. With regard to the actual cost of the course, I may say that my three years' course was covered with a cash outlay of something like \$170 all told. In my second year I held the County nomination, which saved me \$20 tuition fee. Had I remained and worked upon the farm between the first and second, and second and third years, I have no doubt much of the \$170 would have been earned upon the place. I considered my time was worth as much at home during that time, so that I consider

my B. S. A. holds me in debt for something over \$1,000 in actual value. I may say that a number of men, to my knowledge, have gone to the College and come away in three or four years' time Bachelors of Scientific Agriculture, with more cash than they had when entering the Institution. Whether or not such could be done now I cannot say, but I do know that every faithful student who gives two or three years in pursuit of the studies laid down in the prescribed course of the College makes a very profitable expenditure of time and money.

It is especially encouraging at this particular time for bright farmers' sons to secure a correct knowledge of agriculture, in view of the upward tendency of the times. Within the last few months the gradual improving of prices of grains, dairy and other products augurs a general improvement in the conditions of farming, which will do more than any other agency to stop the exodus from country to town which so many lament. It will restore faith in farming, and turn workers to the soil—man's original avocation.

With regard to the ever-improving equipment in connection with the College, I, along with many ex-students of a few years ago, regret that our opportunities there were so early terminated. Our visits, from time to time, fill us with envy as we see the advantages at the command of this-day students. While some are complaining of the heaviness of the course, I might say that honest work, with ordinary intelligence, will succeed in giving in every case a grand education, and in 49 out of 50 cases a diploma or degree, or both, according to the years taken at the course.

With regard to the moral and religious influence thrown around the students, I am sure some mothers, at least, will have special concern, especially if their sons leave the home circle and influence for the first time to take the course. To this I may say no anxiety need be indulged in, because a large majority of the professors are Bible-class teachers or Sunday-school workers, while the Young Men's Christian Association, which holds a weekly prayer meeting and Bible class on Sunday afternoons, managed and largely conducted by the students themselves, receives the heartiest support of nearly all the boys. I have known the active membership of the Association to reach well on to fifty, while a large proportion of the remaining students were associate members. Speaking personally, I may say that the influence from my connection with that College Association will never be forgotten. With very few exceptions, I have no hesitation in saying that during my college life bad boys got no worse, boys of a medium moral character became good, and good boys attained to a high plane of living. With regard to the influence of the city near by, the boys have very little to do with it, as a rule.

Trusting not to have trespassed upon too much of your valuable space, I remain,
AN EX-STUDENT.

Cause and Remedy of Agricultural Depression in Britain.

British farming at present, as an industry, is described by Chas. Rintoul, in a short treatise, to be in a state of decay, notwithstanding the fact that it is associated with the best system of husbandry, the best climate for green cropping, the best breeds of cattle and sheep, and the best markets in the world. The paper referred to, which was read recently before the British Association, at Liverpool, attributes the decay, in a degree, to the abolition of the corn laws, which Act was a Government security to the farmer for safe investment of his capital and labor in producing or manufacturing food for the nation. The depression, however, was substantially stayed for a time by the expenditure by the Government of large sums of money upon land drainage, which, because of its liberal circulation, revived the prosperity of almost every business, and rendered the land exceedingly productive. Manufacturing interests, too, which suffered under the corn laws, got relief and now became prosperous.

About this time a pamphlet was issued broadcast, advocating high farming as a substitute for protection. The advice was liberally acted upon by farmers who owned large holdings. This necessitated a tremendous outlay, which was met by prosperity caused by the Crimean war. The value of landed property advanced 250 millions sterling in twenty years, when the times took a turn, by a number of adverse seasons and by the extending of agriculture in the States of America and the success attending gold finding in California and Australia.

Advanced methods of cultivation and harvesting on the unlimited supply of virgin soil, together with cheap transit, brought the British farmer face to face with the effects of foreign competition. This brings Mr. Rintoul to what he considers the principal cause of the depression—overproduction of grain abroad and underproduction at home. A condition arose which involved an inability to produce grain upon much of the English land, so that large tracts were obliged to go out of cultivation, and laborers were driven off the soil into the towns. Statistics show that in the county of Essex, embracing a radius of a little over twenty miles of London, some 28,000 acres of good wheat land has become derelict. This year we find there is upwards of half a million acres less wheat grown than in the previous year, and there is one and three-quarters millions acres more permanent pasture in England alone than there was in 1880. The population of

the country has also increased by 5,000,000 souls during that period, so that the demand has been greater at home, and the supply less, which is being made up by foreign importations, to the serious loss of the agriculture of the country and industries depending upon it.

Remedies.—Mr. Rintoul naturally suggests as one remedy for the decay of agriculture, that the rents of land be adjusted in accordance with the prices of the products of the soil. Land being the raw material from which the farmer has to produce, if it is valued too high it is impossible that his business can prosper, and so long as this exists agriculture must continue to decay. A further remedy would be realized in having returned to the soil all city refuse, so that the fertility of the land may be saved economically from depletion. To show the practicability of such an undertaking, the details of what has been accomplished by the city of Glasgow are recited. As the works for treating the sewage of that city now stand, 10,000,000 gallons of sewage which had formerly passed into the Clyde is converted into sludge cake possessing considerable manurial value. During the past twelve months, since the works came into operation, 127,587 tons of crude sludge has been extracted from the sewage, and reduced to 10,000 tons by filter-pressing. In this form it is conveyed to the country, where any farmer can have it, carriage paid, at 25 shillings per ton. [It is noticeable that the writer of this paper does not suggest a return to the corn laws as a remedy.] With regard to the duty of the Government in this matter, Mr. Rintoul claims that cheap loans should be provided to landowners whose land has become derelict and exhausted, for the purpose of restoring it to a cultivatable condition. Light railways should also be provided, diverging from the main lines, and city corporations should be prevented from cremating or casting into the sea sewage which might be made a national gain.

The last remedy given is a national system of reclamation of all suitable tidal wastes which would provide virgin soil for general cultivation and for the extension of marsh pastures, so that the raw material necessary for successful farming and stock raising and fattening be kept up. In this connection, a scheme of reclamation on an extensive scale was cited whereby 150,000 acres of land might have been added to the United Kingdom on the Wash lying between Lincoln and Norfolk, at a cost of some twelve pounds per acre. The increased produce that would annually be derived from such a result must be regarded as a great national benefit.

C. P. R. Lands.

Mr. L. A. Hamilton, Land Commissioner of the Canadian Pacific Railway, announces a new system of payment for the lands of that Company, which will come into force January, 1897. The terms are much more advantageous than those at present existing. Under the new plan, principal and interest will be joined together and divided into ten equal parts, to be paid annually. If the first cash installment is paid, no interest will be charged during the first year of occupancy, while the land remains unproductive. A rebate of ten per cent. on all cash payments in excess of the regular amounts due will be allowed. All payments will fall due on the first of November of each year, thus affording an opportunity of realizing on the season's crop before the time of settlement. In effect, the earlier payments are made lighter, being equalized and extended over the whole term of ten years, and the amount is simplified so that the purchaser knows what he is undertaking at a glance, without having to wrestle with interest tables every year.

Farming in India.

BY R. MACONACHIE, B. A., INDIAN CIVIL SERVICE (RETIRED).

The conditions under which agriculture is pursued in India are so widely different from those of farming in Canada that any close comparison is difficult. Yet a few salient facts can be noted, which, to the thoughtful mind, may be interesting. In the first place, the great mainstay of Indian agriculture is

IRRIGATION.

It is true that large areas are sown in dependence on the rain of heaven, but crops thus obtained are very insecure, and every good farmer strives to get some of his land protected by a well or canal. The well is often owned by a number of shareholders, generally kinsmen, whose right to the water is determined by ancestral shares, or the extent of land they each hold. The use of the well is enjoyed by each in turn for so many hours, each man turning out to work with his oxen at whatever hour in the day or night his time comes. A pair of oxen will work about four hours at a stretch turning the wheel or pulling up the bucket which lifts the water. The canals are for the most part large works, constructed by the Government, and the water is delivered to the farmer at so much per acre. It is estimated that there are 25,000,000 acres under canal irrigation at present in India, and there are several large, new schemes under consideration. It is obvious that this artificial increase in the moisture of the soil is obtained at a very considerable cost, whether such cost be represented by a canal acreage rate, or the "wear and tear" of oxen, and their feed. If, however, the Indian farmer spends much in irrigation, he gains greatly in comparison with workers here in the wonderful

CHEAPNESS OF LABOR.

A plowman can be hired in almost any part of India for less than nine cents a day, and the feed of two bullocks, with which he would plow about two-thirds of an acre, would not ordinarily exceed seven or eight cents. The cost of plowing an acre, therefore, would be about twenty-five cents, or about one-sixth of what is reckoned as fair here. The whole cost of the hiring of an ordinary agriculturist would not be more than \$2.50 or \$3.00 a month; indeed, this is rather a high estimate. All agricultural work, in fact, is done in India at an enormously lower rate than in Canada, and though labor here is more rapid and efficient, it is more than proportionately dearer. As regards

PRODUCTIVENESS

of soil, Canada has the advantage. Unirrigated wheat in India cannot safely be averaged at more than 550 or 600 pounds to the acre, though on irrigated lands crops of twice that amount are not uncommon. Plowing, sowing, and harvesting are all done in the most primitive fashion. The plow is of wood, and goes very little way into the ground. Sowing is either broadcast, or in rows, pouring the seed from a bag through a hollow cane. Threshing is performed by the feet of oxen driven round and round a pole till the grain is separated from the chaff, and then it is winnowed by holding up a sieve in the wind. Everything is carried on as it has been for many centuries, and reforms are all but impossible. The only improvement that seems really to have taken root among the people is the substitution of an iron crusher of the sugar-cane juice for the old wooden one. Machinery can hardly ever be profitable while

cattle. Cows are served by any of the stray bulls left to roam the countryside. Considerable efforts have been made by the British Government to improve this state of things, but there is a religious prejudice in the way. It is a religious act of piety for a Hindu to let loose a bull in the name of the Deity. Such animal then is allowed, in most places, to go over the village lands and to trample on and eat the crops without any interference. Mohammedans, however, occasionally object.

COMPETITION WITH CANADA.

To bring these necessarily brief remarks to a practical head, it may be stated that the only article in which Canada and India can come into direct competition is wheat. Wheat is exported mainly from the port of Karachi, in Sindh, but also from Bombay; and the trade has been created by the development of the "through railway" system, which allows special rates favoring wheat carriage to the sea coast. Yet, in spite of this, the wheat trade from India could never have attained its present dimensions had it not been for the

DEPRECIATION OF SILVER

in comparison with gold, by which the purchasing power of the export buyer has been greatly increased. This is the main reason for the large increase of Punjab wheat exports of late years. Should the value of silver from any cause rise, wheat export from India would receive a sharp check and might permanently be injured. Ralli Bros., the great Greek firm which hold most of the trade in their hands, have been doing business at times at hardly any profit, and the fluctuation of the rupee has been so irregular as to make wheat speculations dangerous to all but operators holding immense capital.

STOCK.

Sheep Going into Winter Quarters.

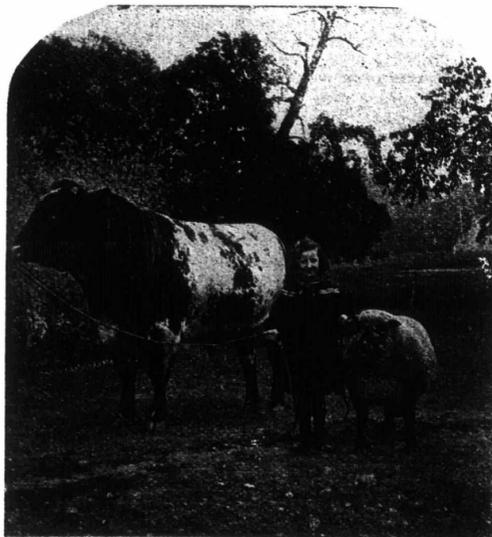
BY RICHARD GIBSON.

Probably this is the most critical time that the flockmaster passes, except during the brief lambing period. There is the selection of the breeding flock, the discarding of the aged, those that breed or raise their lambs badly, have lost a portion of the udder, etc. We all know that as much skill is required in drafting the flock as in filling up. No wise man sells his best females unless for good and sufficient cause, but it is one thing to select the breeding ewe and another the show ewe. The latter, according to the whim of the judge, may be the very ones the breeder wants to discard—big, loose, opened-coated, raw-backed ones that fill the eye, while the smaller, thicker, better backed ones are passed. These, however, are the sort the breeder wants to select. Go for quality every time, no matter what the breed, and let judges and buyers go for size if they wish—they are only taking what you ought to spare. Keep on the even tenor of your way and in the end you will come out all right. The medium sized ones of all breeds are the average ones, and they will be found to produce the most pounds of meat at less cost than either the big or the little ones of their respective breeds.

After deciding upon the breeding flock, select your ram. Buy the best you can and let him be as near perfect as possible. This zigzag, teeter-teeter business advocated by most writers is, in my humble opinion, all bosh. Animal life is not like a sculptor's model, on which a chunk of clay will stick and may be trimmed off if necessary; but with the live creature these chunks of fat, it may be, on the rumps remain for generation after generation. A breeder realizing that his last ram left his offspring, it may be, weak in the leg, he is persuaded to buy one abnormally large there, which simply means he is not symmetrical—a freak, as it were. If his ram is as successful as he anticipates, the next year he will seek for a freak in the other direction, with a large fore end—and so seesawing backwards and forwards, never coming to any decided method or making a reputation. Take my advice: aim to breed each year to the evenest, smoothest, best backed, thickest fleshed ram to be found of the type you have chosen, and don't go for the big ones of the breed. If you are breeding Shropshires, don't go for the very largest or for the smallest. If size is what you are after, buy a Hampshire or Oxford at once, but don't turn up your nose because every breeder is not sacrificing type and quality.

The Change to Winter Food must be gradual. Grain, except to the lambs, ought not to be necessary, and the flock that requires it is not the sort for any farmer to keep and make money. Buildings may be of the most superficial kind, and I always expect to find an ordinary flock on a rich man's place. An architect's building is, as a rule, an abomination, as far as the comfort and well-being of the flock is concerned. Architecturally, it may fill out a picture in the landscape and be an addition to the view from the residence, but the poor animals coughing and running at the nose, coats out of condition, with a sickly, delicate, anemic appearance, are to be pitied. The best building is a big, deep, open shed, tar papered and sealed, three feet high on three sides of building, and open to the south, with big yards or paddocks attached to go in or out at pleasure. Any amount of cold will be suffered with impunity, but drafts are abhorrent and wet positively injurious, so govern thyself accordingly. No one need hesitate to buy a few sheep because he has not a good

A Glimpse at Mr. Robt. Davies' "Thorncliffe Stock Farm" in 1894.



"A little child shall lead them."

THE SHORTHORN, "LORD OUTHWAITE," AND THE SHROPSHIRE "BARNONE."

hand labor is so cheap. Another leading fact in agricultural economics in India is the large item of

LAND REVENUE

payable to the Government. According to historical tradition, all land belonged to the sovereign power, and the old kings limited their revenue demand only to what they thought could be screwed out of the people. Succeeding to the position of the Hindu and Mohammedan rulers, the British Government, wishing to create a valuable property in the soil for the private proprietor, cut down the land revenue assessment gradually till it stands now at something less than one-sixth of the produce estimated in cash. Viewed historically, the arrangement is righteous and moderate. It is indeed the only way in which Indian administration could be carried on, but Western economists are apt to exclaim against a "tax" which may be estimated at 16 per cent. of the farmer's annual income.

Working under these leading conditions—viz.: (1) a great need, almost necessity, of irrigation; (2) great cheapness of labor; (3) land, as worked, only moderately productive; and (4) a heavy cash payment yearly to the ruling power—the Indian agriculturist grows wheat, barley, "gram" (a kind of pea), mustard, and a number of pulses in the cold weather; and Indian corn, millet, sugar cane, indigo, and rice in the hot weather. Opium, tea, and coffee are grown in special tracts. Wheat is almost confined to the Punjab and the country to the south-east of it. Manuring is known and valued by the better class of agriculturists, but the area for which supplies are available is comparatively small. As for stock-raising, perhaps in no one particular is Indian agriculture so bad as in this. The native farmer, left to himself, takes absolutely no trouble about improving the breed of his

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The Beef Cattle Industry.

Our Chicago market report in this issue mentions the fact that a leading firm of Canadian live stock shippers is now in Chicago exporting fat cattle to Great Britain. Last year several of our principal dealers did considerable business of the same sort in Western States markets. The foregoing fact is pregnant with meaning. Our dealers are evidently across the lines principally to take advantage of the available supplies of superior U. S. fat cattle, having at the same time the advantage of favorable freight rates. The latter phase of the question may be more advantageously readjusted through mutual concessions by the U. S. and Canadian authorities as to shipping facilities by Eastern States ports on the one hand and the St. Lawrence on the other. But if Canadian shippers have to go to the States to do export business—and, presumably, they find it profitable—then is there not room for further development of beef cattle raising in Canada? In 1877 we only shipped some 6,940 head, and our export trade reached its height in 1890, when the total was 123,000. In 1895 it was 96,593, and up to the present time the 1896 outgo has been some 85,277 head.

The reports of the Montreal and Toronto markets in this issue of the ADVOCATE appear to tell the same story, that the export trade has dropped off during the past few weeks because there is nothing up to the export market offering, except, perhaps, those going forward from Manitoba, and even those would have been the better of a little more time on the prairie.

"No cloud but has a silver lining," and surely the silver lining of the cloud that has so long overshadowed the beef cattle industry is now becoming visible. In Ontario low prices and scarcity of feed last season caused everything—big and little, old and young—that would fetch money and save feed to be got rid of, train loads of young things being shipped away to the Western ranches. In Manitoba everything that was considered old enough, or big enough, was utilized last winter to transform the surplus low grade wheat and coarse feed into cash; droves of young cattle have also been shipped to the West. The increasing use of dairy sires, and the neglect of many farmers in not keeping up during times of low prices the quality of their stock, leave comparatively few steers of the desirable quality to feed for the export trade. Our dairy herds have improved wonderfully, but not to the same extent our beef cattle.

True, the United States have another big corn crop—some 2,500,000,000 bushels—but a leading authority claims that everything that was fit was fed last winter, and that stockers of quality are really scarce, while the demand for them is reported as remarkable, over 1,000 carloads having been bought in one week lately from the Chicago, Omaha, and Kansas City yards.

The following extract from a letter from the extensive cattle exporters, Messrs. Mullins & Wilson, who are now permanently located in Winnipeg, will be of interest in this connection:—

To the Editor FARMER'S ADVOCATE:

Your favor of yesterday received. In reply, would say that prospects for feeding cattle are all right for the coming season. The distilleries are not feeding the usual number in the East this winter, and that is an important factor in farmers feeding here, as the space on outgoing vessels has to be filled. Of course the crop of corn is big in the States, but they have not got the cattle to feed; and the silver question has been a trouble to the farmers there, as the private banks and others would not advance money to feeders until things are settled. It certainly would be well for the farmers to have their cattle in good shape in the face of so much rough feed as there is this fall. The best class of stock to feed would be steers from 1,100 to 1,200 lbs.—not too heavy, but finished.

Yours truly, MULLINS & WILSON.

Those who know anything about cattle know that the only kind that can be finished to fill the requirements of the exporter are good, smooth, sappy fellows, the progeny of blooded sires of the beef type. They cannot be made from narrow, leggy, scrub-begot steers. To buy the quality stocker at the right price may not be easy, but those who have been quietly breeding the cows to good beef bulls, and caring for the steer calves, should now be "in it." When steers sell at a profit there will be no trouble to sell pure-bred beef bulls of the right sort at a profit. At the present time real good stockers are in keen demand in Ontario.

Referring to the letter of Messrs. Mullins & Wilson, we are not sure that the idea of trying to rear small sized but thoroughly finished steers works out well, as a rule, in actual practice. That it can be done is possible, partly by breeding, but more directly by feeding somewhat on the plan adopted by breeders who, by heavy yet skillful management at the manger, know how to fit their fat stock to win in the showing. We question, also, the propriety of breeding from immature sires and then discarding them at two and a half or three years old.

From the various causes indicated above, we find coming on the Montreal and Toronto markets too great a quantity of weedy, undersized animals of the "canning factory" type, which are neither

good butchers' cattle nor AI stockers. On this subject we commend the timely article, in another column, from "A Dumfries Farmer," which gives the pith of his many years' successful experience in rearing and feeding beef cattle. If our export beef cattle trade is to develop we must have more of the right sort for shipment, and our shippers must have the best available transportation facilities. If the former are forthcoming the latter can be secured.

The first great blow to the Canadian cattle trade was the British embargo, now permanent; but in the season of the year when we have cattle to ship slaughter-on-landing works very satisfactorily. It may be that all foreign meat will yet have to be branded as such in Britain in order to harass the trade, though if we send prime beeves we need not fear to have "CANADIAN" branded honestly on their carcasses. Another protectionist scheme was lately proposed in England, viz., to stop the landing of cattle even for slaughter. In which event we would be driven into a dressed meat trade and closer relations with the United States by breaking down, both as to breeding and ordinary cattle, the international quarantine which has proved a vexatious disadvantage and loss to both countries. Its abolition would be in some respects a gain to Canada, and in others to the States; but it is safe to say that from first to last the cattle quarantine has been regarded as a nuisance on both sides of the line.

Winter Care of Horses.

As winter comes on many of the farm horses that have worked faithfully six days in the week from the opening of spring are released from labor for three or four months. The question arises, How can these be best and most economically wintered? It goes without saying that an abrupt cessation from heavy labor is altogether opposed to health in man or beast. The thing to do, then, is to lower the diet and divide the last portion of the season's work among all the teams, gradually lessening the labor of those we wish to "turn out" for the winter. To prevent excessive stocking for a few weeks after labor ceases is not an easy matter. It may be prevented from reaching a harmful stage by reducing the amount of grain fed and by feeding boiled oats, with considerable bran, in the place of the ordinary evening meal, along with which a tablespoonful of Glauber's salts may be added three or four times a week, except the animal be in low condition, when a tonic should take its place, such as iodide of iron, in dram doses, every night for a week or ten days. Some green food should also be given, such as carrots or turnips, at noon during the winter months. Stocking can also be materially lessened by gentle pressure of bandages from the fetlock up to hock, applied at night and removed in the morning. It is also well to turn the horses out two or three hours daily when the weather will allow. In all cases the object in view is to acquire the maximum of strength and buoyancy of spirits with the expenditure of the minimum amount of money and labor. Keeping an animal in good condition means that the body and limbs are in the most vigorous and healthy form. This can be accomplished only by observing hygienic rules. He should have comfortable quarters, good grooming, good food, and proper exercise. These, however, he is not likely to receive on most farms; nor, perhaps, is so much care profitable, especially the grooming, except in the case of high-priced breeding stock and speeding horses that have come in from a season's campaign, to enter upon it again the following spring.

Ocean Carriage of Live Stock.

Mention has been made by several writers in the ADVOCATE of the excellence of the establishments where Canadian fat cattle are landed and often fed for a few days prior to slaughter. It is also stated that the loss by accidents or disease is remarkably low by every regular cattle liner. Two of the latest additions to the Cunard fleet are cited as probably showing the least loss of any vessels in the trade, though all are phenomenally good. The "Corinthia" has, since her first sailing from Boston, embarked 7,700 head of cattle, of which she has delivered at the Woodside lairage no less than 7,602, or a loss only slightly in excess of one-tenth of one per cent. Her sister ship, the "Sylvania," however, shows even more remarkable results, for out of 9,097 bullocks shipped at Boston she delivered no less than 9,004 at the Birkenhead lairages, a thing unprecedented in the history of cattle-carrying. Any agitation, therefore, for the restriction of cattle imports on the ground of cruelty to animals is barred by the consideration of facts such as these, which also demonstrate that the present arrangements for ocean carriage of live stock on regular liners are as nearly perfect as could possibly be arranged.

Better Every Year.

Wesley Smith, Peel Co., Ont.:—"My father has been a subscriber to your valuable paper (the FARMER'S ADVOCATE) for a number of years, and we are more pleased with it every year."

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pen; the cheapest is generally the best. As to feed, yearly I think more and more of cabbage. It is not only safer than rape, but no feed is equal to it at this season for putting on flesh.

A friend wrote me the other day, saying: "By your advice, I grew cabbage in the root field and treated them in the same manner. I have an immense crop."

They may be kept in piles of any length by pulling and placing them heads down (roots left on) four wide, then in spaces 3, next tier 2, with one for apex. Cover with straw and light sprinkling of soil, or, better, turnip-tops. They will stand as much frost as a swede.

A Canadian Visits the Illinois State Fair.

Seldom has there ever been brought together in the U. S. such an excellent aggregation of live stock as was on exhibition at the "American Royal," held at Springfield, Ill., this year. This fair has now been permanently located at the capital of the State, and the buildings which have been erected are undoubtedly unsurpassed by any on the Continent.

Horses.—The various breeds were well represented. The pacing and trotting races were especially interesting. The best time, 2.08½, was made by Rubenstein; Minna Mills, a pacing mare, went a mile in 2.15 without a driver or sulky.

Cattle.—The beef breeds were well to the fore, and many excellent animals were well brought out. The Whitefaces were much in the majority. The dairy classes were not up to the average, especially the Ayrshires.

Sheep.—In this department at least two Canadian breeders were conspicuous: Robt. Miller, of Brougham, Ontario, and Wm. Oliver. The sheep were not numerous, but of excellent quality, particularly the Oxford.

Swine.—Here the Poland-Chinas were much in the lead. The Berks were few in numbers, but above the standard in quality.

The agricultural exhibits from the various counties in the State were grand, exemplifying that "Corn is king" in Illinois. The dairy exhibit was small, but well arranged. The machinery and implement display was in itself an exhibition.

Among the many other attractions were the numerous fake side-shows, some of which were decidedly indecent, judging from external appearances, and should never be allowed on the grounds, and will in all likelihood not appear again at Springfield.

X. Y. Z.

Our Scottish Letter.

GREAT SALES OF SHORTHORN CATTLE IN ABERDEENSHIRE.

The great events of the past week have been the Shorthorn sales in Aberdeenshire. There has been sufficient novelty in the proceedings to call forth renewed discussion on the merits of Scottish Shorthorns, but when all is said, the balance is more than ever in favor of the class of cattle reared by Amos and Anthony Cruickshank, and the principal herds of which are now owned in Scotland by the gentlemen whose stock has been sold this week. The sales have represented five herds: Mr. Duthie's, at Collynie; Mr. Marr's, at Uppermill; Mr. Gordon's, at Newton; Mr. John Wilson's, at Pirriemill; and finally Mr. George Bruce's, at Heatherwick. All of these are situated in Aberdeenshire, within easy distance of the town of Inverurie, and in a district notable for growing excellent root crops. Mr. Duthie's sale came first in the week, taking place on the Tuesday, and the proceedings closed with the Heatherwick sale on the Friday. The whole of the sales were conducted by Mr. J. McLaren Fraser, of Macdonald, Fraser & Co. (Ltd.), Perth, and prices were good all through. The notable feature was the eager demand for bull calves and yearlings. Buyers were present from all parts of Scotland, Ireland, England, and Wales, and there were also round the rings gentlemen who had the South American market in view. Whether this was the ultimate destination of all the bulls, it was undoubtedly the South American demand which gave tone to the proceedings. Color counts for something in these days, and rich roans—darker rather than lighter—are all the rage. Red, with pronounced white markings, is not so much in favor, and, except for special lines, white distinctly depreciates the stock. Some idea of the trade may be inferred from the averages. Mr. Duthie had £59 18s. 8d. for 49 animals; Mr. Marr had £36 4s. 6d. for 58; Mr. Gordon, of Newton, had £41 5s. 4d. for 46; and Mr. Bruce had £35 5s. for 76. Mr. Wilson's lot were bull calves only, and were sold along with Mr. Gordon's. It may be useful by way of comparison to look at the averages for bull calves only. Mr. Duthie sold 27 at £70 6s. 21s.; Mr. Marr sold the same number at £45 4s. 61s.; Mr. Gordon sold 12 at £36 2s.; Mr. Wilson sold 18 at £32 2s. 10d.; and Mr. Bruce sold 16 at £27 16s. 6d. These prices are a better indication of the state of trade than any other quotations that might be given. As in the case of cows and heifers sold, some are generally out of season or doubtful breeders, and thus it needs discrimination rightly to value the averages for such. The heifer calves are, however, exempt from this objection, and the averages for them may be useful also. Mr. Duthie had £46 5s. 91. for 12; Mr. Marr had £22 4s. 61. for 6; Mr. Gordon had £35 14s. for 8; and Mr. Bruce had £28 10s. 11d. for 16. Yearling heifers were also doing well. Mr. Marr sold eight of them at £31 15s. 31s.; Mr. Gordon sold seven at £46 10s.; and Mr. Bruce sold fifteen at £40 91. The highest price made during the four days was 300 gs. (£315), paid by Mr. Philo L. Mills, Ruddington, Nottingham, for one of Mr. Duthie's bull calves, Crested Knight, by the champion bull, Pride of the Morning, and out of a cow belonging to the world-famed "Clipper" tribe at Sittyton. This is the most popular of the Cruickshank tribes. Whenever a "Clipper" enters the sale ring there is good bidding, and 300 gs. for a bull calf has been an unknown figure in the Shorthorn world on this side of the Atlantic for many a day. The second best price of the week was made for another Collynie bull calf, Lordly Archer, whose breeding attracts from its novelty. He was got by the out-

and-out Sittyton bull, Scottish Archer, Mr. Duthie's best sire, out of a Bates cow, and the cross is a happy one. His color is a splendid rich roan, and he inherits the style of his dam's race, along with the wealth of flesh and depth of his sire's tribe. His price was 135 gs., or £141 15s., and Mr. Mills again was buyer. Best of Archers made 130 gs., or £136 10s., from the same gentleman. Lavender Archer, whose dam was a noted cow from the family which produced the famous Count Lavender, made 105 gs., his buyer being Mr. Cookson, from Wiltshire; and other two made 100 gs. apiece. A heifer calf named Lady Clara III. also sold for 100 gs., her buyer being Mr. Bell, Ratcheugh, Alnwick. So determined were many of the English buyers to secure the pick of the Collynie bull calves that only one of the eminent Scottish breeders, Mr. Gilmour, of Montrave, was able to secure one of the best, at 100 gs. The others had to try their luck at Mr. Marr's sale on the following day, when two of the bull calves again made 105 gs. apiece. In spite of all that the Scottish breeders could do, however, the first of these, Royal Flush, by Captain of the Guard, was taken off to the South of England by Lord Baring, Basingstoke. Mr. C. M. Cameron, Balnakyle, Munloch, in Ross-shire, tried hard to get this bull, but was beaten. He had better luck next time and secured Fabulous Fortune, a get of the same sire as the last, at the same money. Mr. John Marr, Cairnbrogie, Oldmeldrum, the eminent breeder of Clydesdales, is founding a new herd at his farm, and purchased several good things at all the sales. He was a bidder for both of these calves, and missing them, secured a rare breeding-like youngster in Fashion's Favorite, by Wanderer 60138, a very fine old bull. This calf cost 68 gs. Mr. Duthie gave 75 gs. for the first calf in the sale, a son of Captain of the Guard. The best cows were sold at Mr. Gordon's sale. He got 100 gs. for Red Ruth, a daughter of his noble bull, Star of Morning 58189, the best old bull in the North of Scotland to-day, and sire of Mr. Duthie's champion bull, Pride of Morning. Taking the bull calves, the following are the averages made by the produce of the following sires: Pride of Morning 64546, three at £154; Scottish Archer 59893, nine at £91 11s. 81.; Captain of the Guard 58596, fourteen at £53 14s.; Wanderer 60138, seven at £44 14s.; Abbotsford 66588, two at £40 8s. 6d.; Touchstone 60073, three at £39 11s.; Star of Morning 58189, six at £37 9s.; Prince of Fashion 64587, thirteen at £32 15s. 4d.; and Bapton Czar 66647, nine at £30 2s. All of these are well-bred Sittyton or Cruickshank bulls, of varying merit individually, but all, as the prices quoted show, much above the average as breeding bulls. The best young bull seen in the North at these sales is the latest purchase for Uppermill, Spicy Robin. He was bred by Mr. J. Deane Willis, Bapton Manor, Codford, Wilts, who owns the best Cruickshank herd in England and breeds some of the best things seen in the show or sale ring in this country. Mr. Duthie is using a young sire named Twinkling Star, which was bred at Newton by Mr. Gordon and is expected to prove one of the best breeding bulls in the North. He is closely related to several of the most valuable females sold during the week. The principal stock bull in Mr. Bruce's herd at Heatherwick is Lord Chamberlain 67338, a son of the fine Collynie bull Chamberlain, for which Mr. Mills paid 160 gs. at the Duglass sale a year ago. This bull is breeding well and will be heard about. Two notable purchasers of females at these sales were Lord Polwarth and the Earl Percy. These noblemen have noted herds of Booth cattle and have always been regarded as props of that side of the house. We do not suppose either intends to abandon his principles, but Lord Polwarth at least means to try an interesting experiment. He is putting the heifers purchased this week to a Booth bull, and hopes to make an alteration for the better, combining some of the merits of both tribes and correcting some defects. Without making too much of this, there is naturally a good deal of satisfaction expressed by the patrons of Cruickshank blood that these gentlemen have looked at their favorites with so kindly an eye.

"SCOTLAND YET."

Horseshoeing Examinations.

Governor Morton, of New York State, pursuant to a law passed some months ago, recently appointed a Board to take charge of examinations of horseshoers in cities effected by the law. The Board consists of one veterinary, two master horseshoers and two journeymen.

The Board's duty is to hold examinations in each city in New York of over 50,000 inhabitants, grant a certificate to any person qualified to practice, and to receive a \$2 fee from each candidate for examination. Under the law no one is allowed to practice horseshoeing unless duly registered in a book to be kept by the county clerk; the fee being 25 cents. In order to register as master journeyman, it is necessary to have passed the examination of the Board and to have served an apprenticeship of at least three years. The cities coming under the law are New York, Brooklyn, Albany, Troy, Buffalo, Rochester, and Syracuse.

Well Liked in Australia.

Jenkin Thomas, Victoria, Australia:—"Enclosed you will find money-order to the value of 6s., being my subscription to the *ADVOCATE* to September, '97. We are well pleased with the paper, and find very useful information in it."

FARM.**Handy Farm Contrivances and Methods.**

Upon almost every farm there are some handy original devices, or improved methods and practices not generally known, which, if given to the public, could be utilized by others in rendering farm management more economical and remunerative. This department is intended to bring out such information for the benefit of our readers, and is to be maintained by them in holding out a helping hand to their fellow-workers by the interchange of descriptions of labor-saving tools and contrivances, particular ways of management, original and successful experiments tried, or any other feature in connection with farming not generally known.

To encourage subscribers to contribute to this department of the *FARMER'S ADVOCATE*, we offer a cash prize of \$2 for the best, and a second prize of \$1 for the next best, contribution received prior to the 15th of each month. These and other contributions deemed of sufficient merit will be published as rapidly as our space will permit, but will not necessarily appear in order of merit. Compensation according to our standing offer for accepted matter will be allowed for suggestions published but not awarded a prize. The decision in every instance will be final. Descriptions must be written upon one side of the paper with pen and ink, and must bear the contributor's full signature and address. They must be as short and concise as possible, 100 words being just as good or better than 500 if they tell the same story. Where an illustration will assist in making a description clearer, a rough pen sketch should accompany it on a separate sheet from the written matter. Every contributor must be a subscriber to the *FARMER'S ADVOCATE*. These contributions must not be mere reproductions of what have been published elsewhere. What we want is original matter. Plan sufficiently ahead so that the contributions will be as seasonable as practicable.

Coming Conventions and Institute Meetings.

As our reports invariably show, the various conventions of agricultural associations, etc., held during the winter season provide a great amount of valuable information from practical men. The entomological meeting reported in this issue is the first convention of the season; the next will be that of the Ontario Fruit Growers' Association, to convene in Kingston on Wednesday and Thursday, December 2nd and 3rd. On this occasion the Dominion Minister of Agriculture, and the Ontario Deputy Minister of Agriculture, as well as President Ruddick, of the Kingston Dairy School; Prof. Hutt, of Guelph College; and Prof. Craig and Director Saunders, of the Dominion Experimental Farm, have promised to be present and address various sessions.

The next in order will be the annual Bee-keepers' Convention, for which an excellent programme is being arranged, to be held in Toronto (probably in the council chamber), December 8th, 9th and 10th. This Association has formerly met in January.

During the Fat Stock Show at Guelph, meetings will be held on Dec. 7th, at 7.30 p. m., of the Dominion Cattle Breeders' Association (annual); joint public meeting on Dec. 8th, at 7.30; annual meeting Dominion Sheep Breeders' Association Dec. 9th, at 7.30 p. m.; and annual meeting Dominion Swine Breeders' Association, Dec. 10th, at 7.30 p. m.

The Ontario Poultry Convention will take place in Guelph on Wednesday, 13th, and Thursday, 14th January, the Poultry Show being held at same place, from January 10th to 15th.

The Dairy Conventions are very important and always largely attended. The first to be held is the Eastern Dairymen's, at Brockville, on Tuesday, Wednesday and Thursday, January 5th, 6th and 7th.

The Creameries Association will hold their annual gathering at St. Mary's on Tuesday, Wednesday and Thursday, the 12th, 13th and 14th January.

On the corresponding days of the next week (19th, 20th and 21st) the Western Dairymen's Association will convene in Brantford. The best available authorities have been secured to speak at the different gatherings.

Superintendent Hodson, of Guelph, has arranged a grand series of Farmers' Institute meetings, regular and supplementary, for the season, beginning with Nov. 17th, in the Parry Sound, Muskoka, Algoma, and St. Joseph's Island districts, and continuing in various divisions through December, January, February, and into the first week in March. For regular meetings the Province is arranged in eleven divisions, and for supplementary meetings into ten divisions. How thoroughly Mr. Hodson has developed the Institute work throughout the Province will be seen when we say that no less than 450 different meetings will be held, and the services of over fifty men, most of them experienced speakers at farmers' meetings, have been secured. The list includes: Messrs. Thos. McMillan, Seaford, Ont.; W. S. Fraser, Bradford; Prof. H. L. Hutt, O. A. C., Guelph; L. Panton, Oxford Mills; R. Harcourt, B. S. A., Asst. Chemist, O. A. C.; Prof. Panton, O. A. C., Guelph; Wm. Smith, M. P., Columbus; A. McNeill, Windsor; A. J. Reynolds, Danforth; D. Z. Gibson, Willow Grove; Prof. Reed, V. S., O. A. C., Guelph; Elmer Lick, Oshawa; Mungo McNab, Cowal; D. W. Beadle, M. A., Toronto; Alf. Brown, Picton; A. W. Peart, Burlington; J. B. Reynolds, B. A., O. A. C., Guelph; H. Glendenning, Manilla; Thos. A. Duff, Toronto; Andrew Elliott, Galt; Geo. Harcourt, Toronto; R. F. Holterman, Brantford; Prof. Dean, O. A. C., Guelph; Jas. Sheppard, Queenston; John McMillan, M. P., Seaford; D. E. Smith, B. A., Brampton; T. G. Raynor, B. S. A., Rosehall; Joseph Yuill, Carleton Place; Jas. McEwing, Drayton; E. Morden, Niagara Falls South; M. Burrell, St. Catharines; Lieut.-Col. D. McCrae, Guelph; R. Thompson, St. Catharines; N. Monteith, B. S. A., Stratford; W. C. Shearer, Bright; W. W. Hillborn, Leamington; T. H. Mason, Straffordville;

A. C. Hallman, New Dundee; R. S. Stevenson, Ancaster; J. B. Ewing, Dartford; Joseph E. Gould, Uxbridge; Wm. Rennie, Farm Supt. O. A. C., Guelph; Simpson Rennie, Milliken; W. J. Palmer, Toronto; T. C. Wheatly, Blackwell; Prof. Day, O. A. C., Guelph; G. C. Caston, Craighurst; A. Rawlings, Forest; J. E. Meyer, Kossuth; M. Everetts, Smith's Falls; C. A. Zavitz, B. S. A., O. A. C., Guelph; Prof. Harrison, O. A. C., Guelph.

Feeding Roots to Bullocks.

There was, last winter, an experiment conducted by the Royal Agricultural Society of England with a view to ascertaining to what extent the feeding of roots to fattening bullocks is profitable. Sixteen Hereford bullocks, just turned two years old, were used. On Dec. 9th, when the experiment commenced, they were valued at £15 per head. They were divided into two lots of eight each, each lot receiving the same kind of food and same weights of cake and barley, the only difference being in the quantities of roots and chaff given to each set. The consumption of a smaller or larger quantity of roots influenced the amount of dry matter consumed, so that the quantity of chaff fed was allowed to vary according to the appetites of the animals. The quantity of water was also allowed to vary in the same way. The cake and corn given throughout the course was a mixture of linseed cake, decorticated cotton cake and barley. The chaff was hay chaff and oat-straw chaff, half and half up to Jan. 26th, after which hay chaff alone was used. The roots were, first, white turnips (Dec. 9th to 29th); then swedes alone, until Jan. 19th; from then till Feb. 2nd, mangels and swedes, half and half; and from Feb. 2nd till March 30th mangels alone were given. The proportions of artificial food were, during the first month, two pounds each of the three sorts; during the second month the linseed and cotton-seed cakes were increased to three pounds each, while during the last month the decorticated cotton cake was increased to five pounds. The weight of roots fed was twenty-five pounds to the light-fed lot and forty pounds to the others, the latter quantity being increased to fifty pounds, which was all the animals would take. The bullocks eating the lesser quantity of roots consumed about one pound more chaff daily (fourteen pounds against thirteen pounds) and ten pounds more water (fifty pounds against forty pounds). The gain per head per day during the experiment was 1.66 pounds for the light-fed lot as against 1.75 pounds in the case of the heavier root feeding. The actual gain in value of the lot fed on the larger quantity of roots was 2s. 10d. per head. This seems to indicate that a moderate quantity of roots—enough to keep the health of the animals in fine form—is almost as conducive to rapid fattening as the full amount that the animals will take.

Fattening Export Cattle.

To the Editor FARMER'S ADVOCATE:

SIR,—The business of fattening cattle is a most intricate branch of farming, and in compliance with your recent request, I may be compelled to crave more than a fair share of your valuable space. However, I trust that what I have to say may in some degree be of benefit to your readers. First of all, one or two fundamental principles must be laid down, to which we shall strictly adhere, and then all will be clear sailing. A farm should be strictly a producing institution, and the aim should always be to produce only the best, whether it be grain or stock. I have known many farmers buy both cattle and feed to fatten them, but of this system I never approved, because if it were profitable on a small scale why not make a business of it? To procure the best results it is advisable for the farmer to raise, as far as possible, all cattle intended for stall feeding. Of course, good dams are a requisite in this case. For this purpose I prefer the Shorthorn grades as a good breed. They are usually large and strong-boned, suitable for carrying a good coat of beef. (The Galloways and Angus, I believe, are both good beef cattle, though I have had no experience with the latter.) Cattle are more easily fattened after they are about two and one-half years old, as by that time they have attained sufficient growth to fatten well; besides, they are then heavy cattle for export, and it is usually that class which brings the highest prices. The steers of the thin-fleshed dairy breeds make good beef for local trade, but are neither good feeders nor good sellers, so it is not advisable to deal in them. I merely mean to convey the idea that their size does well enough for local buyers, but for export the larger animal of good quality is required if the top figure is to be obtained. I have seen too many of these inferior animals to speak well of them, but I would much rather praise the good quality than decry the other. That is a principle I always follow. No farmer, however careful he may have been, can have all of his young cattle just up to the mark. And, therefore, if "a weed" does crop up in the herd, dispose of it before it reaches the age named. It will never pay as a stall feeder, and even though it may be sold at an apparent sacrifice you are still ahead. A good article is always cheap in the end, so if the farmer must buy cattle for fattening, the best type should invariably be chosen. In buying feeders it is well to look for the strong-boned animal, the drooping horn, the strong jaw, the broad, full chest, the deep shoulder, and the long, straight

back—all salient points that go to make up the outline of a first-class feeder.

Cattle intended for fattening should never be left out late in the fall, as in a few cold nights they will lose more flesh than they will regain in a month. When the cattle are all stabled, the feeding should be light for a few days, gradually increasing as time goes on, and the feeding boss should be watchful of the inclinations of each animal. One will take, and can stand, more turnips than another. Another will eat less hay, chaff or other fodder than the first, but the careful feeder will give these little details his attention, and will find it most profitable in the end.

For these coarser feeds there can be no fixed allowance, as I have already noticed, but for grain feed (chopped) six quarts per day is a very fair amount; this to be divided into three feeds. I have fed all kinds of chopped grain, and would advise mixing the heavy grains, such as peas, rye, or corn, with equal quantities of oats or barley. A few more points may be touched on, as to keeping the mangers and stables clean and well ventilated, watering the cattle once each day, and twice a day in warm spring weather, and, not least of all, feeding at regular intervals. With these conditions observed any beginner may look for success.

A DUMFRIES FARMER.

Bright Prospects.

The latest Government estimate of the wheat yield in Manitoba, computed from threshers' returns, reduces the yield from 18,000,000 to 14,000,000 bushels, which is probably nearer the mark. The increase in price will largely make up for the deficiency in yield, especially as the crop was an inexpensive one to take off. The straw, being light, required less twine, and was handled throughout with less labor; and as the weather was exceptionally favorable, it was got into the elevators promptly and in good condition. In the Territories the crop has been a bumper, exceeding that of last year by probably 1,000,000 bushels, yields of 40 and 50 bushels per acre being commonly reported, with in many cases 25 and 30 off stubble crops. Of course, hail and frost have cut a considerable swath out of the crop in some districts in the Province, but on the whole the prospects of the farmer have not been so bright for many a day. Oats are sure to be worth good money before another crop can be harvested, and those who have a supply held over from last year are well "in it." The wise farmer will, however, not allow himself to be carried off his feet with the present price of wheat, but will profit by the experience of the past and utilize any spare capital he may have to increase or improve his live stock and provide suitable accommodation for the profitable handling of that stock, concentrating his efforts in the more thorough cultivation of limited areas of land, rather than spreading himself out over extended acreages.

DAIRY.

Winter Dairying.

If winter dairying is to be made a success in Canada, as it undoubtedly will, the work must begin on the farm with the patron. Many additional factories are taking up buttermaking this season, and the present outlook is very favorable. "The Production of Milk for Winter Buttermaking" in this issue is the subject of the first of a series of practical articles by Mr. John B. Muir (Supt. of the Middlesex Co. Factory Syndicate), one of the most successful cheese and butter makers in Canada, he having, some five years ago, added the winter creamery feature to the cheese-factory business under his charge in Perth County, Ont. Mr. Muir's articles will repay perusal.

Too Much Water.

Mr. Robt. Gibson, in reporting the Limerick (Ireland) butter market, says: "The rogery of intentionally making water stand upright by the aid of some butter, and selling it as butter, is of frequent occurrence. On August 10th I had a lot, supposed to be creamery butter, the firmest of which showed on analysis no less than 22.05 moisture, and there is no doubt that the water being there was no accident. It is woful, wilful, wicked waste to make stuff that is not wanted except at miserable prices, while it is so easy, by care, to make the choicest, which is so much wanted at good prices."

Butter Flavor.

"Butter-fats are neutral bodies which have scarcely any flavor when pure. The aroma or flavor of butter is chiefly developed from the curd of other constituents of the milk that are retained with the butter-fat when the butter is made. These flavors are, to a large extent, produced by micro-organisms in the milk or cream; hence, butter made from fresh milk does not resemble in flavor the choice butters on the market, although it may in some degree acquire such flavor after it has been kept for some time. That the flavor is somewhat dependent upon the food, no one can deny, as characteristic flavors of such substances as onions, turnips, ensilage, and other strong-flavored foods, are often imparted to the butter. Such flavors are usually volatile, and may be expelled by thorough aeration, or, better still, by heating, after which the desired flavor may be

developed by ripening the cream with starters of the proper kind. Generally milk contains an abundance of those organisms that impart a good flavor to butter; hence, good butter may be made without the use of starters. If, however, the milk be tainted, the addition of a starter containing the organisms desired may be of great advantage; especially is this true if the cream be first pasteurized to destroy the organisms which it contains. More uniform results may be obtained, in all cases, by the use of a properly prepared starter."—Dr. S. M. Babcock.

Australian Butter.

FACTORIES AND GATHERED CREAM—A BIG BUTTER FACTORY—PRESERVATIVES—PACKAGES AND PACKING.

(Specially prepared for the FARMER'S ADVOCATE by J. S. Larke.)

(Concluded from page 429.)

The Factory System.—A good deal of butter is yet produced by individual farmers, but the export trade is mainly from the factories, and the production of the factory is as steadily increasing as that of the farm is decreasing. In 1895 the factory production of butter in New South Wales was two and one-third times that of three years before, while the production of the farm was ten per cent. less. In some cases the whole process of buttermaking is done in one building, but commonly the milk is sent to creameries, where the cream is separated, and after being cooled is sent by rail to some central butter factory. Cream has been thus shipped 200 miles.

The Largest Factory is situated in Melbourne. It uses the cream from 60 creameries, and in the season turns out about 17,000 pounds of butter per day. The milk is sometimes bought by the factory directly from the farmer, the price being based on the butter-fat it contains, and sometimes the business is conducted on co-operative lines, as the cheese factories are in Canada. The principal factories are equipped with a refrigerating apparatus which keeps the churning and packing rooms at a proper temperature, and also freezes the butter when packed for exportation. The cream is churned and worked with the machinery common in Canada.

Preservatives.—In addition to salt, various anti-ferments are added to the butter to aid in preserving it. Borax, boracic acid, saltpetre, carbonate of soda, and sugar are the chief of these. The popular addition is known as "preservitas." It is a compound of borax, saltpetre, white sugar, and salt, and is added to the butter in the working at the rate of one pound to the 112 pounds of butter. It is not recommended, as far as I can ascertain, by any Government authority, and it has been occasionally reported upon as deleterious. It is not used for butter that is intended for early consumption, as it is said to give it an unpleasant flavor, but it is generally used for butter sent to England.

The Favorite Package is the cubic box which measures 12 x 12 x 12 inches inside. This form is used because it can be cheaply produced, is easily handled, and is economical in the use of space in cold storage and on shipboard. It is made of 1-inch dressed New Zealand white pine or kauri, the former being preferred on account of its being lighter and cheaper. It is essential that the wood shall be thoroughly seasoned or it will flavor the butter. A couple of years ago Canadian spruce was used for this purpose, but a prejudice arose on the ground that the wood tainted the butter. Some enquiries made in England showed it was the exception to find butter affected when packed in spruce, and where it was it probably arose from the timber having been imperfectly dried when used.

Packing.—The box is lined with a vegetable or grease proof paper (parchment paper), two sheets to the package, so arranged that the solid cube of butter may be shaken out with the paper adhering to it, and from which it is easily removed. Into this box 57 pounds of butter is placed, the corners being carefully filled by pressure (not ramming) with a hardwood packing-stick. It is presumed that a pound of moisture is lost by absorption, and the package will produce a half hundredweight (56 pounds) of butter when opened in England. The butter is directly transferred from the cold storage at the ports to refrigerating chambers of the speediest mail steamers. It is complained that these chambers are not always maintained at an even temperature, just below freezing point, and the butter is damaged on the long voyage of 35 or 40 days. On the whole, it is carefully carried, as the fact that choice Australian butter so closely approaches the price of fresh-made Danish indicates.

Adulteration.—It is sometimes alleged that Australian butter is adulterated despite the careful watching of the Government. Only two such cases, so far as I am aware, have been proven, and this was in butter sent to one of the neighboring colonies. A still worse complaint is that on opening in England it is found to be fishy or cheesy. A report of Mr. Wilson, its dairy expert, has just been issued by the Government of Victoria, in which he deals with this matter. He says:—"To practical buttermakers, however, it is amusing to be informed in reports from England that the cause of 'fishy' butter is the 'want of sufficient moisture to retain the natural aroma that butter ought to have.' Surely the greatest amateur in buttermaking must know the secret—not only of retaining the natural aroma, but also the

keeping quality of the butter—lies in expelling all the moisture possible during the process of manufacture.

"Having stated that moisture causes and not prevents 'fishiness' in butter, it is perhaps as well to explain what, this season, has caused butter to become 'fishy.' There are several causes, the principal of which, however, are:

"Neglecting to aerate the milk when pastures are rank and strong-tasting weeds abundant.

"Accepting from suppliers milk that is partly sour, or, perhaps, just 'on the turn,' separating the cream from that milk and churning it into butter.

"Churning cream at too high a temperature, and neglecting to air the churn during the operation.

"Working, salting, and packing the butter at too high a temperature, frequently 80° and 90°, whereas this work should never be attempted when the temperature is over 60°.

"Either of these causes is sufficient to affect the keeping quality of butter; but when all are present, as too commonly is the case, the extent of the 'fishiness' can be better imagined than described. Churning the cream at too high a temperature, and working, salting, and packing the butter at too high a temperature, are practices that exist in too many of our factories. When butter in a heated condition reaches the refrigerating depot at Flinders street, the parchment paper used in lining the boxes is almost embedded in the butter, and clings to it in a sticky way, as if it were soft soap. Although we chill the butter down to the proper temperature before shipping, we cannot give it that firm, clean and attractive appearance that catches the eye of buyers. When this class of butter reaches London, practical men can detect 'fishiness' at a glance, and knowing the actual cause—not insufficiency of moisture—this operates against its success in the English market."

Inspection and Branding.—As the Government wisely holds that it is of the highest importance that "Australian butter" shall be a brand synonymous with excellence, and that every box of bad Australian butter damages the sale of the goods, it has determined to be more rigorous than ever in its inspection and enforcement of careful provision for ensuring a good product. In New South Wales the export is in the hands of a few large concerns, and self-interest compels them to exercise the rigorous oversight which the Government is attempting to exercise in the other colonies. One point more may be stated respecting the butter boxes. Too great care cannot be exercised in seeing that boxes are made each side of one piece and of sound as well as of well-seasoned, non-odoriferous timber. Not only does the ill-seasoned wood taint the butter, but sappy wood in ocean shipment or storage at a moderate temperature tends to dry rot or mildew, and this, too, affects injuriously the contents of the box.

Fresh Cow vs. Stripper Butter.

The impression held by many dairymen and others to the effect that it is necessary to have part of the milk from fresh cows in order to produce butter of good flavor has been fairly conclusively proved to be groundless, at least when the separator is used, by the results of an experiment conducted at the Iowa Experiment Station by G. L. McKay, Dairy Instructor, and C. H. Eckles, Assistant Instructor. Cows that had been milked six months or more were considered strippers. Of this sort, 15 cows of Holsteins, Shorthorns, Jerseys, and Red Polls, having milked an average of 239 days, made up one lot. The second lot consisted of 18 of the same breeds, having been in milk an average of 107 days. The two lots were fed alike on blue grass pasture and cotton-seed meal. The cream was extracted by means of a separator, and carefully cured in a small vat. Without going into details of scoring, etc., it will suffice to give the general conclusions arrived at by the experimenters, which are:—

"From this and similar experiments, it would seem that the period of lactation has no effect on the flavor of butter; that is, when the milk is handled by the separator system. Under a gravity system there may be some difference, as so many dairymen claim, and the following is a possible explanation: The fat globules, as is well known, are smaller in advanced periods of lactation, and when cream from such milk is raised by the gravity process more time is required for the cream to rise than when the milk is from fresh cows whose milk contains globules of much larger size. We have found that cream or milk when kept at a low temperature for some time develops a somewhat bitter flavor. There seems to be an organism which grows at that low temperature and which gives a flavor to the cream and to the butter. It is possible that this is why strippers' milk is generally considered as inferior for the production of butter."

The Elma cheese factory, which ranks among the largest in Western Ontario, is to be carried on as a winter creamery this season.

The British Dairy Farmers' Association has decided to make their annual excursion next year to Scandinavia instead of to Canada.

The Western Ontario Dairy School at Strathroy will reopen for the present season on Nov. 25th, with a full staff of instructors. Short and long courses, as desired.

Common Ailments of Dairy Cows.

DISEASES AND ACCIDENTS PECULIAR TO PREGNANT COWS AND IMMEDIATELY FOLLOWING PARTURITION.

(BY V. S.)

In considering the diseases and accidents peculiar to pregnant cows, it is highly advisable first to consider their general management, with a view to preventing, as far as possible, those undesirable conditions, and also with a view to obtaining the best results from our feed and labor.

At this season of the year our attention should be directed more especially to the condition of our stables. Let us see that they are put in proper condition for our stock, and one of the first things to be considered is that it is large enough for the number we have to house.

There is no one portion of dairy stock management, to my mind, requires more consideration than the sanitary condition of our stables. No animals can show good results when kept in an overcrowded, badly-ventilated, and insufficiently drained premises. Upon the other hand, unnecessary exposure to cold and drafts is just as bad, for the food given under such conditions is then appropriated in supporting and maintaining heat for the body, consequently at the expense of everything else.

Some dairymen of my acquaintance never allow their cows exercise from the time they are tied up in the fall until they go to pasture the following spring. This I consider not a good practice. When animals are highly fed, as many dairy cows are, I consider a certain amount of exercise necessary, if allowed in favorable weather and in good, comfortable, well-protected barnyards. I do not approve of the idea of cows far advanced in pregnancy being turned out with a lot of young stock, regardless of weather, and allowed to travel twenty, thirty or fifty rods, as the case may be, to a creek or spring to drink in the winter, as they are liable to receive injuries from running, and are more than liable to drink far too much cold water, for probably yesterday was so stormy that they preferred to go without a drink, and to-day they are so thirsty that they are liable to overdo the matter. Those far advanced in pregnancy are liable to abort as the result, or if milking, are dangerously exposed to a chill and an attack of mammitis (caked udder).

In connection with cows being exercised, there is one matter that too many overlook, and that is the habit of herding cows with a dog. To my mind the average dog on a dairy farm is a very expensive luxury, and if I may be allowed to wander for a moment from my text, I will just enumerate what I consider accidents due directly to the effects of cows being driven by dogs: Garget (mammitis), bloody milk, abortion, failure to get in calf (supposed), which in reality is in many cases abortion in the earlier stages of pregnancy, and which escapes notice. Therefore it pays to take a little more time and drive the cows ourselves, and have no loud, boisterous, and rough attendants which make vicious and nervous animals out of what would otherwise and ought to be quiet animals.

Much has been written and said regarding the way animals ought to be fed in order to obtain certain results; and, unquestionably, some diets produce more milk than others. This article is not intended to advance ideas upon principles of feeding, yet in such an article it would be very incomplete if this portion of our management were omitted.

One of the most fatal diseases with which we meet in cows at calving is due largely to the manner in which such animals have been fed. I speak now of parturient apoplexy, or more commonly called, or mis-called, milk fever. Prof. Williams says: The exciting causes may be looked for in the act of parturition itself, mistake in dietary, and the season of the year. In Fleming's Obstetrics we note the following in his chapter on parturient apoplexy: "Plethora, there can be no doubt, exercises a great influence in the production of the disease. Thus it is chiefly among the well-fed cows, particularly those kept for milk in the vicinity of large towns, and which seldom or ever leave their stables, and are abundantly nourished immediately before calving, that parturient apoplexy prevails most severely and extensively; in such conditions as not to be wondered at. It is true that it may attack milk cows in moderate or even comparatively poor condition, but then it will be found that their hygienic management has been at fault."

In the same chapter he uses these words: "It has also been remarked that a uniform or even abundant diet is less dangerous than an abrupt change from scarcity to generous allowance." So in summing up the opinion of such authors, and from observations, some special attention in the way of diet is very necessary in the management of deep milkers. Food should be of good quality and of such a character and quantity as to not induce too great a plethoric condition previous to calving and for a period of say ten or fifteen days after.

It is quite true that if a cow passes over the third day safely she is considered out of danger, as far as this affection is concerned, but I have seen cases develop after a much longer period; therefore, to be safe, avoid fleshing up the cows too much until after they have calved. Permanent confinement in the stable also acts in a similar manner to abundant and stimulating food by inducing plethora and a relaxed condition of the system.

Thus it is that it is almost, if not quite, unknown in hilly pastures or when animals are freely exercised in the summer months.

The direct causes of mammitis cannot be justly laid down as being wholly produced by overfeeding or too rich a diet, yet I feel justified in saying that it produces conditions which within themselves are direct producers of this malady, namely, causing a great flow of milk and overtaxing the gland, which first becomes congested. And if very prompt and persevering measures are not adopted, we have a very serious condition on our hands. In fact, the very last case of mammitis, and one of the worst that came under my notice, was, without a question of doubt, brought on by overfeeding on unthreshed millet.

Keep the cows in a strong, healthy condition, avoiding, as far as possible, undue fatness for a period of two or three months before calving, if they are heavy milkers. Moderate exercise daily is very beneficial, and never allow a cow to dry up that has had an attack of parturient apoplexy.

I speak of the advisability of avoiding this disease more than any other simply because of the gravity of its nature and the possibility of avoiding it, for I consider it one of the easiest prevented and most treacherous and fatal diseases, when once established, with which the dairyman has to contend.

In summing the matter up, provide your cows with good, comfortable, light, well-ventilated stables, with good food, pure water; and to make the best use of these when provided, have none but the best attendants procurable.

If you will allow me access to your cow stables and barnyard when your stock is in, I will tell you pretty nearly what kind of a man you have attending your stock, even though he is from home. Let me know the disposition of your man and I will tell you the disposition of your stock in three months from the day of his arrival.

[TO BE CONTINUED.]

The Production of Milk for Winter Butter-making.

BY JOHN B. MUIR.

In the production of milk for winter butter-making, the utmost care is required on the part of the dairyman in providing himself with a first-class herd of cows, in supplying them with the cheapest and most economical food for the production of milk, and in giving them the proper care and treatment. He must also give attention to the care of the milk, so that it will reach the creamery in the best possible condition.

Selecting the Cows.—To secure a good herd of cows, the dairyman must use his good judgment in selecting and breeding. The most important point in selecting is the intelligent use of scales and Babcock tester. Every dairyman should frequently weigh and test the milk of every cow in the herd. If you have not a tester, take a bottle or pint jar for each cow, and immediately after milking stir well, then put about two ounces in the jar; repeat for at least four milkings. Take the samples to your buttermaker and he will gladly test them for you. From my own experience in managing one of the best factories in the Dominion, I can strongly recommend this plan to both patron and maker. The patron is enabled to weed out unprofitable cows, and the maker is rewarded by getting more and better milk from the good ones. After carefully testing and selecting the best cows in the herd, by breeding them to a sire of some dairy breed of good individuality and raising the calves, a first-class herd will soon be the result.

For winter milk the best time to have the cows come in is October or November.

Cave of the Cows.—For the economical production of milk during the winter season it is necessary that the cows be provided with warm, comfortable stables, and those having frame stables, with some boards loose or off, and big cracks for the wind to blow through, causing the cows to hump their backs and shiver, will do well to remember that "a pine board makes good feed for a cow in the cold weather," meaning that protection from the weather saves food, while exposure calls for a greater consumption of it. After battening up all cracks, replacing broken panes in the windows with good ones, and making everything snug and warm, make the cows as comfortable as possible by giving them a nice dry bed to lie on and keep them clean. This can be best accomplished by the use of the model cow-stall recommended by ex-Gov. Hoard. I speak from experience, as I kept a cow all last winter in a stall of that description, tied with an ordinary web halter, and she was just as clean when turned out in the spring as when put in in the fall.

Clean Stables.—It is of the utmost importance that the cows and stables be kept scrupulously clean, as we can not expect to make fine flavored butter from impure milk, and it is impossible to have good, clean flavored milk from dirty cows and stables. If every farmer would only spend a few minutes daily grooming his cows with a coarse broom brush, he would be well repaid for his labor by the increased thriftiness of the cows, resulting in a saving of feed and a larger supply of milk. Those who have stables so arranged that they cannot keep the cows as dry and clean as they should be could help matters very much by clipping the hips with a horse clipper, which will prevent the filth from sticking in the hair and accumulating.

Food for the Cows.—All live dairymen, especially those interested in producing milk during the

winter season, regard the silo as almost a necessity; in fact, it is as John Gould has said: "When it comes to milk production, we have not found any plant that compares with the corn, either as a green food, dry fodder if made presentable, or as silage; the latter being now the dairyman's sheet anchor in winter dairying." I can add that from my four years' experience managing a winter creamery, the patrons that were provided with ensilage and fed from forty to fifty pounds per day, six to eight pounds of meal, and a feed of clover hay, have been better pleased with winter dairying, as their cows gave more milk at less cost than on any other feed. This is fully borne out by the fact that four years ago we had two silos, this winter we will have thirty-five or forty, and the milk has always been of uniformly fine quality. As there are still a large number not provided with ensilage, cut fodder corn and mangels is the next best thing. Turnips should never be fed if we are to have a good reputation for our winter butter.

I might mention a fact that came under my notice this fall at the Harrietsville, Ont., factory. A number of the patrons started feeding turnips. The milk was put into a vat and made up separately, and a dividend struck according to the output. It took 12.70 pounds milk to make a pound of cheese from it, while the other milk supplied to the factory only took 11.07 pounds milk to a pound of cheese. They soon got tired of being separated from the other patrons, and discontinued feeding turnips and started feeding corn. In every case there was an increase in their milk, showing clearly that it would have been more profitable to have fed corn, and the corn would not have effected the flavor so that the cheese had to be sold for one cent per pound less. Now, this applies with a great deal more force in winter buttermaking, as we could not even get within a cent a pound for butter with a turnip flavor that we could for fine flavored butter.

All dairymen should unite in doing everything possible to secure the best reputation for our winter butter, and absolutely discontinue feeding turnips to milk cows.

To those who have not an abundant supply of some succulent food, I would recommend them to try giving their cows all the skim milk they will drink while it is warm and sweet, as a number of our patrons have done so with good results. Do not forget to always keep a supply of salt in every cow's manger, so that she can help herself, and, if possible, have an abundant supply of pure water before them in the stable at all times.

Care of the Milk.—As everything connected with milk should be scrupulously clean, have the stables cleaned just before milking, milk with dry hands, strain the milk through a double piece of clean cloth, thoroughly aerate, not in the stable, but where the air is pure, by putting through an aerator or by dipping and pouring, and do not forget that it is important to aerate the milk even in winter to make fine flavored butter. Set the can containing the milk in some place where the air is pure and the temperature will not fall low enough to freeze it, and stir at intervals to prevent the cream from rising, so that the maker will be able to get a representative sample when it arrives at the creamery.

Milk Contamination in the Stable.

While it may be unwise to dwell mentally upon all the obnoxious matters known to exist in different sorts of food, yet when we are brought face to face with the fact that large quantities of foreign substances which get into milk may be hindered from doing so by the application of a little extra care, surely the necessary caution is in keeping with good judgment. Gosta Grotenfelt, President of the Mustiala Agricultural College, Finland, in his work on dairy practice points out that as the impurities which get into the milk, even during the milking itself, play such an important part in the infection of bacteria, it is important to learn their origin. The microscopic examination gives a good indication of their origin. He reports having actually found the following appalling list of impurities in unstrained milk fresh from the cow:—

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|---------------------------------|--|
| 1. Manure particles (numerous). | 9. Small wooden pieces, shavings and pieces of fir leaves. |
| 2. Fodder particles. | 10. Woollen threads. |
| 3. Molds and other fungi. | 11. Linen threads. |
| 4. Cow hair (numerous). | 12. Soil particles (rather frequent) and moss particles. |
| 5. Particles of skin. | 13. Fine threads, most like cobwebs, etc. |
| 6. Human hair. | |
| 7. Parts of insects. | |
| 8. Down from birds. | |

It is reasonable to suppose that a great many of these substances frequently get into milk in the ordinary stable conditions in winter. The more careless the milkers and other attendants are the greater will be the proportion of contamination. No doubt the milking machine, if it ever comes into ordinary practice, will prevent the access of some of these external substances, but even without that, by the scrupulous care of attendants and others having to do with the cows and the milk these contaminating substances can be largely prevented from entering. Well-groomed cows, clean udders and litter, and good ventilation will do much in the way of keeping the milk pure, but with all these conditions the milk should not be allowed to stand in the stable for any length of time after it has been drawn from the cows. The sooner it is strained—and strained thoroughly too—the better.

On many farms the milk strainer is a most carelessly used utensil—often out of order and not half cleaned. Examine it at once. We were astonished to learn that this season some cheese factory patrons in _____ County had been found dumping the milk into the cans without straining! No wonder the factory strainer looked as though the whole of the above collection had become entangled in its meshes. Honestly, we could hardly credit the story that there was still alive a Canadian patron whose ideas of cleanliness in dairying were in so primitive and deplorable a condition. If we are to make a success of winter dairying we must first of all be clean.

VETERINARY.

Swine Fever-- Its Nature and Suppression.

(SPECIALLY PREPARED FOR THE "FARMER'S ADVOCATE.")

At the fourteenth general meeting of the National Veterinary Association, which was held at Great Yarmouth, London, England, the principal topic dealt with was swine fever, known in America as hog cholera. A very able and exhaustive paper was prepared by J. McFadyean, M. R. C. V. S., Principal of the Royal Veterinary College, London, and issued to the members of the Association one week before the time of holding the meeting, which accounted for the exhaustive discussion which followed. The following is a compilation of Prof. McFadyean's paper and the discussion which followed:—

Swine fever is a specific disease which, in natural circumstances, is transmitted to no other animal than the pig. Like glanders in horses and tuberculosis in cattle, swine fever is a purely contagious or infectious disease, and the germ which causes it would cease to exist if the porcine species became extinct. In natural cases of the disease the bowel and the mesenteric glands constitute its most constant seats. Owing to its minute size and the fact that its shape is in no way characteristic, a microscopic search for the parasite is of little or no value for diagnosis. On the other hand, its mode of growth in some artificial media is so characteristic as to make its isolation and identification an easy task in the laboratory when the carcass is fresh. It is killed by complete desiccation at 100° F., and in the moist state it does not stand exposure to a temperature of 140° F. for more than a few minutes.

How Spread.—Probably all the cases of natural infection take place by the ingestion of bacilli voided from the intestine of a previous subject of the disease. It is probable that the disease is sometimes spread by human beings and other intermediary agents, but the all-important factor in the diffusion of swine fever is the sale of apparently healthy hogs that have in reality received the infection or have the disease in a mild form.

Period of Disease.—The interval that elapses between the reception of the infection and the development of distinct symptoms of illness is very variable, its length partly depending upon the amount of infective material taken into the system and partly on the degree of susceptibility of the animal. A susceptible subject infected with a large quantity of material may show symptoms of illness the following day and be dead within 48 hours. As a rule, however, a pig infected with swine fever will in about eight or ten days exhibit symptoms of ill health sufficiently pronounced to attract the attention of its attendant.

The Symptoms usually exhibited in a moderately severe case of swine fever are somewhat as follows: Slight but gradually increasing dullness and loss of appetite; the pig comes less readily than usual to be fed, and in the intervals between meals it does not move about much, but inclines to lie buried among its litter and invariably drops its tail. As the disease advances the appetite for solids becomes almost lost, but thirst is present, and any liquid given with the food is greedily sucked up. Diarrhoea may or may not be present. When it is the faeces are grayish in color and unusually offensive in smell. In the last stages the pig lies persistently, and when made to move its gait is uncertain, resembling partial paralysis. The skin may show a red or livid discoloration, especially in the under aspect of the body. Death occurs quietly and without convulsions. There are cases of swine fever, however, which present little or no external symptoms, except dullness and drooping of the tail.

Post-mortem Revelations.—In dealing with the morbid anatomy of the trouble, reference was made to twenty post-mortem examinations conducted by Prof. McFadyean. The first case mentioned is of a pig about two months old, infected by feeding with artificial culture of the swine fever bacillus. It died on the second day. A post-mortem showed slight livid skin discoloration on under aspect of the abdomen. The mesenteric glands and those of the large intestine considerably congested. The mucous membrane of the large intestine was intensely bright red. The small intestine was moderately congested throughout. The mucous membrane of the stomach intensely inflamed. The spleen, liver, kidneys, thoracic organs, tongue, throat, and body lymphatic glands were in normal condition. With slight variations, the above are the conditions met with in the twenty cases operated upon. With part of the cases the disease was produced by feeding with swine fever bowel, when death usually occurred in from twelve days to three weeks, when peritonitis, and in some cases

swelling of the lungs, was present. In some cases of long standing the kidneys were intensely congested, and the liver showed abnormal, small, grayish points. The tongue occasionally showed small ulcers, and the lungs numerous hemorrhages about the size of split peas.

From what has already been given, and a great deal in the paper not referred to here, it is quite evident that the disease of swine fever is mainly confined to the stomach and intestines, the other organs being affected from these by a spreading of the inflammation and congestion. Wherever pneumonia or pleurisy was present, the Professor attributed it to a complication of troubles and not to the swine fever.

Fighting the Disease.—The paper contained a table showing the number of outbreaks in England, by months, between November, 1893, and May, 1896. Of these months the first mentioned had the fewest outbreaks, numbering 252; the highest being 709, in October of last year; while in May of this year there were no less than 638 outbreaks of the disease, which proves conclusively that the measures being adopted are failing utterly to stamp out the disease in England. These numbers do not represent swine attacked, but only herds or, perhaps, districts.

The British Board of Agriculture has machinery in operation dealing with swine fever in the same manner as pleuro-pneumonia, but this, as is being carried out, was very emphatically condemned by a number of prominent speakers during the discussion, as being too lax to be ever expected to do away with such a pernicious and persistent malady. The main cause of the failure is attributed to the unexpected difficulty in following up the sources of infection and in diagnosing the disease in the living subject. This difficulty, it is claimed, can be overcome in only one way, viz., by imposing severe restrictions on the movement of pigs in every district in which swine fever is known to exist. The time has come for letting those who are interested in the breeding and rearing of pigs know that they must choose between severe restrictions on movement and abandonment of the efforts to stamp out swine fever.

During the course of the discussion a number of gentlemen claimed to have observed that quickened respiration and cough, together with consolidated portions of lungs, usually accompanied the disease. Mr. J. D. Overed, in speaking of the necessary means of eradication, said: "I am quite of opinion that isolation is necessary, combined with slaughtering, and I am also further of the opinion that disinfection is essential, but these matters, to be effectual, must be carried out promptly and fully."

As a means of conveying the contagion, it was generally claimed that the castrator and dealer were to blame for much of the spread that could not be accounted for in any other way.

At the close of the meeting the following resolution was introduced and agreed to: "That in the opinion of the National Veterinary Association the enforcement of severe restrictions on the movement of swine in every district in which swine fever is known to exist is absolutely necessary for the eradication of the disease."

POULTRY.

Poultry Require Green Food in Winter.

BY J. E. MEYER, WATERLOO CO., ONT.

If we are to obtain the greatest return from our poultry during the coming winter we must have a good supply of vegetables on hand to feed them. Apples are very plentiful and cheap this fall, and they will be much enjoyed occasionally during the winter by our fowls. They may be fed whole and raw, but you must be careful not to feed them when frozen. Put away all the poorly headed cabbages for them, and give them one occasionally to pick at during the winter. A very good way to feed cabbages is to hang them up where they can be reached easily. Some hang them so high that the birds have to jump up to reach them for exercise, but we prefer giving our fowls exercise scratching for their grain. We do not believe they were ever intended to exercise by jumping. [NOTE.—Friend Meyer evidently does not see any need of erecting a gymnasium in which to exercise his hens.—Ed.]

Ducks are very fond of cabbages and you should get in a good supply for them. We know of no green food that they relish more in winter or that is better for them. It is even more necessary that they should be well supplied with green food than your hens. Turnips and mangolds make splendid green food.

Mangolds are better food than turnips and are excellent for wintering geese on. We feed our roots mostly raw and pulped put in troughs. If there is no danger of freezing, a whole mangold or a turnip may be left for them to pick at. We sometimes cook pulped roots and mix with chopped grain or middlings and feed.

Potatoes should always be cooked and mixed with grain. No better use can be made of your small potatoes than feeding them in this way occasionally to your poultry.

If you have never made a practice of feeding green food to your poultry try it this coming winter and you will be astonished at the results in health, egg production, and the saving of grain.

Now is the time for the readers of the ADVOCATE to get up a club of new subscribers and secure some of our premiums.

Preserving Eggs.

One of the most effective methods of preserving eggs in a perfectly fresh condition is to place them, the very day they are laid, in lime water prepared as follows: Place quicklime in a large pan or tub, two pounds of lime for every gallon of water; stir frequently for twenty-four hours, then allow the lime to settle, and pour off the clear liquid into jars; also stir in a handful of salt. Gather in eggs every day, and place them gently in the lime water. When the jar is full, every egg being covered with the liquid, seal up air-tight and store away in a cool place. The jars should not be disturbed till the eggs are wanted for use. If an egg happens to be cracked in putting into the jar or afterwards, it is liable to taint the whole lot, rendering them unfit for use. To this we would add, get the eggs from hens with which no male bird has been running, so that they will not be fertilized, then follow the plan given, and the eggs will come out at the end of six or eight months as fresh as the day they were laid.

Whitewash the Poultry House.

Farm and Fireside suggests a quick mode of whitewashing a poultry house. On a platform upon the roof of the poultry house stands a barrel containing the wash, made as follows: First slake the lime; add a quantity of water and strain it, placing the thin liquid in the barrel. A gill of carbolic acid added to the whitewash will improve its purifying properties. About one and a half inches above the bottom of the barrel insert a hose with sprayer attached. By having a tap in the sprayer the walls and ceiling can be whitewashed much easier and quicker and more perfectly in the cracks than if a whitewash brush were used. Ordinary fruit-tree sprayers answer the same purpose.

ENTOMOLOGY.

Entomological Convention.

The 34th annual meeting of the Ontario Entomological Society was held in London, Ont., on October 21st and 22nd inst., with a fair representation of its members present. Among gentlemen from a distance who contributed to the programme were: Prof. J. Hoyes Panton, of the Ontario Agricultural College; Dr. Bethune, Port Hope; Rev. Thos. W. Fyles, South Quebec; H. H. Lyman, Montreal; and J. D. Evans, Trenton. The chair was occupied by President John Dearnness, I. P. S., who presented an estimable address, in which he referred to the past year's work as being characterized by energy, progress, and success. The two aims of the Society were devotion to science and their desire to disseminate its good to their fellows. With regard to local insect ravages during the past season, reference was made to the destruction of large areas of crops, sown on inverted sod, by the cut worm larvæ from the moths (*Hadina arctica*) which were so numerous in the August of 1895. The question of fungi was dwelt upon at considerable length, a number of species being illustrated upon the blackboard. Touching reference was made to the late J. M. Denton, as the present was the first meeting at which he had not been present since the inception of the Society. It was suggested in the address that the Society issue a bulletin to be used in public schools, containing cuts of a few typical injurious and beneficial insects and their life-history, for object lessons to the pupils. The idea is a commendable one.

Insectivorous Mammals.—Mr. Robt. Elliott, of Plover Mills, read a very instructive and interesting paper upon insectivorous mammals found in Ontario. Bats were referred to as destroying myriads of nocturnal insects. It was interesting to learn that there are upwards of 400 varieties of bats in existence. Moles and shrews keep up a constant search for terrestrial insects, while earthworms form a considerable bulk of their food. Shrews found in Ontario closely resemble mice, but follow an entirely different mode of livelihood. They feed on mice and insects, May beetles being largely consumed by them. Raccoons and skunks, although omnivorous, destroy great quantities of mice and insects, such as grasshoppers. Skunks are regarded in some hop-growing countries as being almost essential to the industry, because of their destruction of grubs that infest the roots of the hop plants.

Agricultural Science in Public Schools was elaborated upon by Prof. J. H. Panton. By means of a chart a simple and practical method of presenting the subject of entomology in the schools was given. The chart bore headings of what may be used as topics for popular and instructive lectures, to be given to the pupils on, say, the last hour of every Friday. The biting and sucking mouthed insects constitute the whole lot, and should be treated with poisons such as Paris green or kerosene emulsion, according to their means of feeding. The beneficial and injurious varieties should be distinguished, and their life-history understood. Technical names should be avoided until the pupils desire to know them. The teaching in the schools should be in the shape of talks, and introduced without extra expense. The pupils themselves could collect, and in a few years every rural school would have a good collection of the common insects. In speaking of natural enemies to insects, the Professor referred to birds as being among the foremost. The advantage of having a

case of say 40 or 50 of the commonest and best kinds stuffed and in a case in every school would show what sorts to protect particularly. Parasites and insecticides, as well as barriers and poisoned baits, were referred to as remedies which should be taught within these school lectures. This paper was highly complemented by members of the Society.

In this regard it might be mentioned that President Dearnness has already been endeavoring to have the schools within his inspectorship collect specimens and study the life-history of insects found in the neighborhood. As a result of his efforts, collections of army worms, in all their stages, and other insect enemies were prepared by teachers and pupils and exhibited by them at the last Western Fair.

Prof. Panton suggested that this Society use its influence in inducing agricultural societies to offer prizes at county shows to schools making the best entomological exhibit.

Importance of a Knowledge of Entomology to Agriculturists and Fruit Growers was the subject of a paper read by Rev. T. W. Fyles, of South Quebec. Of the 25,000 species of insects known in N. America only 8,000 are pests. In order to successfully combat an insect foe, one should understand its life-history. Having that understanding, one knows how, when and where to spray to best advantage, and also how to make the most of our insect friends.

Two Pernicious Worms.—Prof. Panton read an exhaustive paper upon the description, life-history, and distribution of the army worm and tussock moth, each of which have attracted much attention in Ontario within the last season. Both of them have already been elaborated upon in the ADVOCATE. By the use of a map the Professor indicated the distribution of the army worm by counties, which information he gathered from some 450 replies to circular letters sent out from the College. It showed that so far as he could learn some 39 counties had suffered more or less severely during the past season. Oats, wheat, barley, and corn were the crops mostly destroyed. Clovers, peas, beans, turnips, potatoes, mangels, carrots, and other vegetables and fruits are not touched by it so long as grasslike crops can be found. His remarks on the tussock moth, which caused so much havoc to the Toronto shade trees, were much in common with what we have already published. Other papers were read by Dr. Bethune, H. H. Lyman, Mr. J. Law, and reports of the various sections of the Society were presented.

Officers Elected: President, John Dearnness, London; Vice-President, H. H. Lyman, Montreal; Secretary, W. E. Saunders, London; Treasurer, J. A. Balkwill, London. Directors—Dr. James Fletcher, Ottawa; Dr. Bethune, Port Hope; Arthur Gibson, Toronto; A. H. Kilman, Ridgeway; C. G. Anderson, London; Prof. Panton, Guelph. Librarian and Curator, J. A. Moffat, London. Auditors—Prof. Bowman and R. W. Rennie, London. Editor of the "Entomologist," Dr. Bethune, Port Hope. Editing Committee—Dr. Fletcher; Rev. T. W. Fyles, South Quebec; H. H. Lyman, Montreal; and James White, Snelgrove. Delegate to the Royal Society of Canada, J. D. Evans, Toronto. Committee on Field Days—Messrs. Wolverton, Hotson, Spencer, Balkwill, Rennie, Elliott, Bowman, Anderson, and Saunders, London.

Injurious Insects.

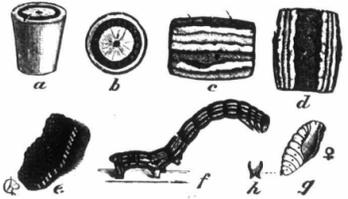
(BY J. FLETCHER, LL. D., F. R. S. C., F. L. S.)
CANKER WORMS.



About the first week in November, or at any rate not till after the frosty nights of October have reminded us that winter is at hand, the first specimens of the canker worm moths appear. In taking a walk through the woods during that delightful but too short season which we fondly call "Indian summer," the fragile male moths may be seen fluttering among the leafless trees looking for their wingless but active mates. In none of our native insects is there such a difference between the two sexes as with the moths of the canker worms. The males are possessed of large, delicate wings, with which their light bodies are borne easily from place to place when searching for the females. The females, on the other hand, are entirely destitute of wings, and as they run hurriedly up the trunks of trees, look much more like spiders than moths.

There are two species of canker worms found in our orchards, which are named respectively, from the time of the appearance of the moths, spring canker worm and autumn canker worm. Of the former the moths appear chiefly in the spring, and the females lay oval, pearly-white eggs in irregular masses, pushing them by means of an extensible ovipositor into cracks or beneath flakes of bark. On the other hand, the autumn canker worm moths appear late in autumn—throughout November, when the weather is mild till as late as the middle of December. The eggs of this species are entirely different from those of the spring species,

for they are brown in color, flattened on the top (a and b), and laid all close together in clusters (c). These clusters of about one hundred eggs are placed by the female in some exposed place, on the outside of the bark of a tree, on a fence, or any other convenient object. There seems to be no effort to conceal them; their inconspicuous color being their only protection. The young caterpillars appear when the trees are leafing out in spring, and are hard to detect unless looked for very closely. In almost all cases their presence in an orchard is only brought to the notice of the fruit-grower by injuries already committed, and this



frequently not until it is too late to prevent serious loss in the year's crop. These two kinds of canker worms are very much alike in general appearance in all stages of their development. The caterpillars belong to that class called "loopers" or "geometers" from their manner of walking. The fore part of the body is pushed forward and the surface of some object laid hold of with the front feet; the rest of the body is then brought close up to the same point and the body again extended. "Measuring worms" and "inch worms" are other names given to these caterpillars for the same reason. They will be at once recognized from the good figure given at f. When full-grown they are about an inch in length, and are green or brownish in color. The moths of both kinds are also very similar, the females being gray, wingless, spiderlike creatures, while the males, as shown at a, have delicate, gauzy, gray wings. There are slight differences in the markings and structure, by which a specialist can distinguish the two species; but these differences are of no importance here, because the habits of both at the time they injure crops are alike, and the remedies for both are the same.

Remedy.—There are none of the many remedies that have been suggested which can compare for efficacy with spraying early in spring, when the young caterpillars first appear, with Paris green or some other arsenical poison, in the proportion of one pound Paris green, one pound quicklime, and two hundred gallons of water. If this spraying be done immediately after the flowers have fallen from the trees, not only will canker worms and many other leaf-eating insects be destroyed, but the great enemy of the apple crop, the codling moth, will also be to a large measure controlled. There are circumstances, however, sometimes, which render spraying a difficult operation, if it is to be done thoroughly. In some parts of Canada the apple trees are old and very high, or they are planted so close together that it is difficult to get among them to do the work as thoroughly as is necessary. Under these circumstances, some of the old-fashioned methods of banding the trees are very useful. These bands are of two forms: either mechanical contrivances, by which the female moths are prevented from crawling up the trees to lay their eggs, or bands of paper tacked around the trunk, upon which some adhesive material is painted in which the moths get entangled and are thus destroyed. For this purpose, printer's ink reduced with fish oil (in the proportion of twenty pounds printer's ink to four gallons of fish oil) is largely used in the Maritime Provinces. A mixture which also has given good satisfaction in Ontario is that suggested by Mr. O. F. Springer, of Burlington, Ontario: For autumn application, or early spring when the weather is cold, a mixture of castor oil, two pounds; resin, three pounds (for warmer weather the resin may be increased to four pounds). The oil and resin should be heated slowly and no more than to thoroughly dissolve the resin; stir frequently to thoroughly mix. This mixture may be applied directly to the trees with a paint brush, and will not injure the tree in any way. It should be applied warm in a band about three inches wide. To economize the material, the rough bark should be scraped off the trees. Castor oil is the best of the non-drying oils to use for this purpose, because it does not injure the trees. The work of banding, Mr. Springer says, is not so great as might be supposed at first. An active man can go over 250 trees in ten hours. Should the mixture get too cold to spread readily, it may be easily and quickly brought to the proper temperature by using a portable oil stove. The band may need renewing once or twice, but the second application does not need nearly as much labor or material as the first.

Thorough work in fighting canker worms bears lasting results for many years. The female moths, being unable to fly, cannot travel very far from the place they emerge from the chrysalis. It therefore pays a farmer who finds his trees infested to use every effort to do the work thoroughly, spraying early in spring and also banding in autumn; keeping always in remembrance that the bands will not take care of themselves entirely, but will require a little attention to keep them sticky and to destroy the eggs when laid below the sticky bands. Renewing the bands in spring prevents the caterpillars from crawling up the trees.

GARDEN AND ORCHARD.

Horticultural Hints for November.

BY M. BURRELL, LINCOLN CO., ONT.

The year 1896 has proved to be an extraordinary one for nearly all fruit crops, and the fact enhances the interest that is being taken nearly everywhere in the theory and practice of horticulture. Prices, unfortunately, have been painfully low, but this only emphasizes the necessity for attention to every little detail, if any margin is to be left for profit. The horticulturist, pure and simple, is getting alive to this, but we must remember that a very large proportion of the country's crop is grown by men who are firstly and chiefly agriculturists; and where fruit-growing is a subordinate part of the farm work, it is natural that many things which conduce to success should be regarded with indifference. The farmer becomes a farmer almost unconsciously. From boyhood he has imbibed the essence of a hundred written and unwritten laws affecting his work. When he starts into fruit culture it is different. New conditions have to be studied and new problems solved. He is realizing, however, that the question of loss and profit as between one cow and another will apply with equal force to fruit trees—one tree lines your purse, another empties it. The work, too, demands close and constant attention. Almost before the money from the sale of the fruit jingles in your pocket it is time to start preparing the tree for another crop.

Cleaning and Cultivation.—This month (November) especially is the time to put all fruit trees and vines in good shape for the winter. As in live stock, so in horticulture—the first year or two is an exceedingly important time. Neglect then is fatal, if not to life, at least to the growing of anything like a perfect or profitable tree. The young trees and vines, etc., especially should be plowed up to, and a free escape provided for all surplus water. The first year or so, when the root system is not thoroughly established, is a critical time. I do not know anything more ruinous to a young tree than to have water freezing and thawing round its trunk and the tender roots lying in a cold, soggy soil. After plowing up to the trees, it will pay to take the shovel and mound the earth round the trunk twelve or fourteen inches high. This banking process assists in shedding water, and has always proved with me an effectual guard against the ravages of mice. Do not let cornstalks remain in the orchard; and by all means remove or burn any litter or refuse of any kind. Anything of that sort simply forms a choice shelter and breeding place for a hundred insect pests and mice.

Blight.—This is a good time for the fruit-grower to examine his pear, apple, and quince trees for blight. There has been far more blight this season than for years, and the fight against it is neither general nor systematic. It is established beyond doubt now that the disease is due to the work of a certain form of bacteria. The gentleman's name is *Micrococcus amylovorus*, but the last syllable of the first name would be near enough for general purposes. Like others of his kind, he multiplies at a fearful and wonderful rate, and works with a perseverance worthy of a better cause. It is well, of course, to cut out the diseased part of the tree whenever seen, but a thorough examination should be made tree by tree. The bacteria are largely killed during the winter, but some usually survive, and these, though dormant during the cold weather, are frightfully active on the approach of spring, and soon spread the mischief broadcast. Cut off the limb well below the blackened part, where the wood is quite healthy. If you don't do this, it is more than likely you will both leave some of the rascally organisms behind and distribute others by means of the knife or saw. Be particular about immediately burning all affected wood. It is about as bad to leave the enemy alive on the ground as alive up in the tree. In cutting limbs of any size, it would be wise to paint the exposed stub with some mineral paint or linseed oil.

The Strawberry Patch.—There is money in going over the strawberry patch now with a pointed hoe or a long-bladed knife. However careful the cultivation may have been, it is an exceptional patch in which no bad perennial weeds are left. The rows look clean at a casual glance, but look close enough and you will detect horse sorrel, clover, dock, and many another foe. The plants may be small enough to escape the notice of any but an observant eye, but next spring in the busy time they will "get there with both feet," and you will blame yourself for not spending an hour or two at them in the fall. "A stitch in time saves nine."

Save the Young Tree-tops.—Every man who owns an orchard, in working it should by all means muzzle his horses. I've yet to see the horse who won't grab the tender tops of the young trees when they tickle his nose so invitingly as he passes. Cheap wire muzzles can be obtained, through which the horse can breathe with perfect freedom, and which are completely effectual. Try it, and see the jerking and shouting it saves.

We have noticed a young orchard in which about ten per cent. of the trees were badly girdled (some of them nearly ruined) by a flock of sheep and lambs which had the run of it for about a week. A word to the wise is sufficient.

QUESTIONS AND ANSWERS.

[In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

Veterinary.

CATARRH IN SHEEP.

C. H. O., Simcoe Co.:—"I have four sheep which have a discharge from the nose (similar to a cold in the head) and make a snivelling noise as they breathe. They have had the disease ever since I got them, a year since. Please tell me what course I had better pursue, and whether or not the disease is contagious?"

[The symptoms given indicate chronic catarrh. Mr. Richard Gibson's sheep article in this issue refers to the importance of cool, dry, well-ventilated winter quarters, which, if always provided for healthy sheep, will prevent any such trouble as catarrh or other respiratory ailments, except contagious diseases. Although we have no guarantee in stating that catarrh, even when chronic, of long standing ever becomes contagious, we are fairly certain that treatment with a view to permanent cure is unsatisfactory. Owing to the small number of sheep in question, and the time affected, we would advise doing away with the flock and commencing again after a few months with strong and healthy stock. We say a few months, for fear of possible infection, although it is not indicated in the description of the case.]

With regard to treatment of mild cases of catarrh, we might say that the antiseptic effect of a small quantity of clean pine tar rubbed on the sheep's nose, or, better still, the mixing of a small quantity with their salt, will be beneficial. No doubt if tar were always mixed with the salt, little, if any, such trouble as cold in the head or catarrh would ever occur, if the quarters were at all suitable.]

Miscellaneous.

MISCELLANEOUS QUESTIONS REGARDING FRUITS.

E. W. C., Carleton Co., Ont., asks (1) for a list of fruits adapted to his locality? 2. Value of mulberries? 3. Best time for planting small fruits?

[1. A list of fruits for your district is given in the Experimental Farm report of 1893. This, I think, will be quite suitable for cultivation in your locality. You possibly may find varieties of better quality, and some which may even be better adapted, but those mentioned are all likely to succeed and are probably the most suitable to begin with in the absence of actual experience upon which to base an opinion. 2. With regard to mulberries and pears, I do not think it advisable to plant either of these fruits extensively. The European mulberry is not sufficiently hardy for cultivation in Carleton County. The Russian mulberry will stand the climate, but the fruit is not of much value. It has been grown from seed, and therefore is exceedingly variable. Now and then we find a specimen of a desirable type, but more frequently the fruit is small and of little value. The Flemish Beauty is the most reliable variety of pear. 3. Regarding the fall and spring planting of small fruits, I may say that such fruits as raspberries, currants, and gooseberries may be transplanted with equal success either in the fall or in the spring. Between the latter half of September and the first half of October is the most suitable period for transplanting them, if the work is done in the autumn. If in the spring, then as early as possible. Strawberries are best set out in the spring. The same may be said of grapes, especially in the colder parts of the Province. J. CRAIG, Dominion Horticulturist.

NOTE.—We notice that the list of fruits recommended in the report referred to is for Quebec Province, divided into thirteen districts, No. 8 being for the counties of Pontiac, Ottawa, and Montcalm; the two first named being simply separated from Carleton Co., Ont., by the Ottawa River, so that the list would be doubtless suitable. It is as follows:—

- Summer—Yellow Transparent, Duchess.
- Autumn—Wealthy, Peach, Haas, White Pigeon.
- Winter—Golden Russet, Pewaukee, La Rue, Arka, Hiberna.
- Apples.....
- Pears..... Bessemianka, Flemish Beauty.
- Plums..... Foreign—Blue Orleans, Shropshire Damson, Glass Seedlings.
- Cherries..... American—De Soto, Wolf and Local Seedlings.
- Grapes..... Montmorency, Early Morello, Orel 25, Bess-arabian.
- Raspberries..... White—Lady, Winchell, Moore's Diamond, Red—Moyer, Delaware, Mary, Vergennes.
- Black—Early Victor, Moore's Early, Peabody, Rogers 17.
- Gooseberries..... White—Golden Queen.
- Black—Hansel, Turner, Cuthbert.
- Black—Hilborn, Mammoth Cluster.
- Blackberries..... Snyder, Agawam.
- Gooseberries..... Houghton, Pearl, Industry.
- Blackberries..... White—White Grape.
- Red—Victoria, Versailles, Prince Albert.
- Black—Lee's Prolific.
- Strawberries..... Crescent, Sharpless, Bubach, Capt. Jack.

The apple list recommended by the Ontario Fruit Growers' Association for Carleton and adjacent counties, as per the 1894 report, was as follows: Summer—Yellow Transparent and Duchess Oldenburg. Autumn—Alexander, Montreal Peach, Wealthy, and Haas. Winter—Pewaukee, Golden Russet, Scott's Winter, Talmon Sweet, and Edgar's Red Streak. We would caution our readers against planting out many varieties in an orchard.

EDITOR FARMER'S ADVOCATE.]

NEW FRUITS.

A. S., Danford Lake, Que., asks for a list of fruits suitable for cultivation in his district. Also regarding the hardiness of some new introductions.

[In the report of the Experimental Farms for 1893 will be found a list of apples and other large and small fruits recommended for cultivation in that county (Pontiac), as well as other counties in the Province of Quebec. Among the new and widely advertised fruits there are a number which it will be unsafe to plant in any portion of Quebec. Of these, I would mention Abundance, Burbank, and Prunus Simonii plums, also Idaho and Keiffer pears. I do not think that any of these, in addition to Downing's Everbearing mulberry, will be sufficiently hardy to stand the climate. Idaho and Keiffer pears are undoubtedly harder than the plums, but are not likely to succeed except in the most favored portions. J. C.]

WINTERING APPLE SCIONS.

L. D., Ottawa Co., Que.:—"When should scions for winter and spring grafting be secured? How old should the seedling roots be?"

[Apple scions intended for grafting during the winter should be cut in the autumn, just after the leaves fall and before heavy freezing commences. The last year's growth only is taken. The scions should be packed in sawdust, not too damp, or closely in forest leaves, and placed in a cold cellar. Each variety should be carefully labelled. The seedling roots upon which these scions are to be grafted, in the event of root-grafting, should be dug in the autumn and also stored in a root-cellar. Outdoor grafting is done early in the spring, before the sap starts, either upon the branches of trees, as in top-grafting orchard trees, or at the collar (base), as in crown-grafting seedlings two or three years old. In Western and Southern Ontario, scions of hardy varieties of apple need not be cut in the autumn, but in Eastern and Northern Ontario and Quebec it is much the safest plan to secure the scions in the autumn and save them from possible injury by cold and inclement weather by storing in a cellar. J. C.]

CLUB-ROOT.

J. F., Westmoreland Co., N. B.:—"I send to you a couple of cauliflower and cabbage plants that have become deformed in the roots. Nearly all of my cabbage and cauliflower have grown this way this year. Last year some grew the same way. When the sun is warm and hot they all wilt down almost as though they were pulled up by the roots. I transplanted them out of a box or hotbed, set them out without disturbing the roots much, and left a lot of earth around them when I set them out. Can you tell me what is the cause of the deformity? Some of the cauliflowers are blossoming prematurely. It now appears as if there would be a total failure."

[I find the cabbage plants to be badly attacked by "club-root." This is a fungous disease, but quite distinct in character and life-history from the ordinary mildews and rusts. It might be classed as a lower form of the flowerless plants, belonging as it does to the slime molds. These abnormal growths on cabbage and cauliflower roots were formerly supposed to have been caused by insects. Patient and careful investigation by German scientists has established, without doubt, the true cause of the distortion. The spores of the fungus live for an indefinite period in the soil. It obtains entrance into the cells of the growing root in a semi-liquid condition. It robs the cells of their contents, and rapidly causes a distension of the cell wall by the multiplication of its own spores and development of its own substance. From a slimy condition it changes to a granular, and finally forms spheroidal bodies, which are the spores and carry the disease over from year to year. This fungus was called *Plasmiodiophora*, meaning plasma or "slime bearer," by the German scientist, Woronin. The specific name *Brassicæ* was given on account of it attacking so many members of the Cruciferae family. It has been found upon cabbage, cauliflower, radish, turnip. It also attacks "hedge mustard" and "shepherd's purse," two very common weeds. Remedies.—As to remedies: Owing to the nature of the disease the only practical one will at once suggest itself, viz., a judicious rotation of crops. Members of the cabbage and mustard families should not follow each other on the same land oftener than once in three or four years. Good results have been reported from the use of quicklime, at the rate of seventy-five bushels per acre. I have no doubt it would have a deterrent effect upon the growth of this fungus. J. C.]

LARGE-FLOWERED HYDRANGEA.

W. A. McL., Lanark Co., Ont.:—"Is *Hydrangea paniculata grandiflora* hardy at Ottawa? Does it need winter protection? How should it be treated? How should white outdoor roses be treated?"

[We have not taken any special pains to protect the large-flowering hydrangea on our exposed grounds at the Farm. This beautiful shrub flowers on the young wood, and, therefore, the greater the number of young shoots that we obtain, the larger the number of flowering trusses we shall secure. Although we do not protect them generally, yet it might be advantageous to give them some protection the first and second years after setting out, in order to assist the plants in becoming well established and well rooted. This end might be secured by drawing the branches together and wrapping

the top with a straw or hay bandage, or it might be protected with evergreen boughs, which can be attached to a stake driven in the ground near the base of the plant. In the spring the branches should be cut back severely, leaving on each one or two joints of last year's wood. This close cutting back is essential to secure a well-shaped, free-flowering shrub.

Regarding the white rose: Presuming it to be one of the hybrid perpetuals, I do not see that anything would be gained by taking it up in the autumn. We treat our roses very much on the same principle and after the same plan as the hydrangea, keeping in mind that the hybrid perpetual flower on the young wood. The roots are protected in the autumn by a heavy mulching of manure. In the spring all the wood that has been injured by winter is cut back, also other branches which it is necessary to remove in order to give the bush a desirable shape. Tea roses may be taken into the house during winter and will bloom, but should be rested in the spring before planting out in the open.

JAPAN PLUMS—HARDY CHERRIES.

A. M. S., Colchester Co., N. S.:—"Would it be safe to plant the Crosby peach and the Japan plums? Is the Rocky Mountain cherry worth planting? What are the best cherries for this locality?"

[I fear that Colchester Co. is outside the field of the successful cultivation of the Crosby peach, and, possibly, Japan plums. At any rate, if you have planted any of these varieties I would advise you to grow them with low heads, so that they will have the advantage of all the protection the snow may give them, especially when young. There is nothing said about the relative merits of Japan plums in my reports, for the reason that they have not succeeded at Ottawa. They were all included in the original plantation set out some years ago, but were killed the second year. They were replanted, but our first experience with them was repeated. It is possible, however, that Burbank, Abundance, and Willard may be found sufficiently hardy in your locality, but I am very much afraid that they will be found wanting. The Rocky Mountain cherry is an interesting little plant, bearing fruit in great quantity: but in regard to quality, as compared with the sweet cherries and best varieties of the Morello type, we find that it falls far below. The stone is very large and the flesh watery. When compared to our hardest Morellos, as a cold-climate cherry in the same category as the sand cherry (of which it is only a variety), I think that it is destined to be of considerable value. I am propagating one or two selected varieties produced at Ottawa, which I shall send out for trial as soon as sufficient stock has been accumulated.

Among our best sour or Morello cherries are Ostheim and Montmorency. We have fruited a number of Russian cherries, which have been described in Bulletin No. 17, copies of which are still available.

TROUBLE IN THE RAPE FIELD.

W. R., Bruce Co., Ont.:—"I turned my cows into a field of rape, and after they were in a few days one of the cows got sore teats. They were swollen and inflamed and the skin peeled off, being very painful, causing kicking. Then in a few days two more took it. The skin peeled off their noses also. Can you tell me the cause? Was it the rape or some poisonous weed?"

[I have never met a case such as is described, though I have seen a great many cattle pastured on rape. I have seen, however, the ears of lambs become very much swollen and inflamed when the lambs were on rape, and in some cases portions of the ears would drop off. I have also seen the skin of hogs become discolored and inflamed from the same cause. I am unable to assign a reason, and the strange part of it is that one may pasture lambs on rape for years without meeting such a case as I have described and then encounter a season when a great many lambs are affected. I am therefore inclined to think that the rape may be the cause of trouble with the cows, and I would advise your correspondent not to allow his milch cows to pasture on the rape, but to cut it and feed it in limited quantities until they become accustomed to it. Perhaps some other subscriber can help in this matter. When rape is sown thinly and allowed to become well matured before feeding there is less danger of evil results.

G. E. DAY, Agriculturist, O. A. C.

Mr. D. G. Hammer, the Shropshire sheep breeder, of "Hill Home Stock Farm," writes:—"As to feeding rape, we have never used it much for cattle. We had some trouble once or twice with lambs getting sore mouths and ears. The ears would first get inflamed, swelling quite bad, and then become sore, and finally wither up if not attended to. The difficulty occurred when the sheep were confined on the rape. When running part of the time on old pasture or fed on grain and other dry food in connection, no trouble occurred. I have no doubt the trouble with the cattle is of the same nature. With us one or two applications of Little's Dip effected a complete cure. Have known the same trouble to occur in two other flocks. I do not know how to account for it, as it does not occur only occasionally, as we have only been troubled twice in eight years."

CARE AND FEED FOR YOUNG BULL.

SUBSCRIBER, Bothwell Co., Ont.:—"I would like to know how and what to feed a bull calf, now four weeks old, which is intended for service?"

[In a general way this question has been answered many times in the columns of the ADVOCATE, but the above indicates a desire for advice as to specific treatment. It goes without saying that early maturity, together with moderate (not high) condition is what should be aimed at. It then behooves the owner of such a calf to exercise judgment in the care as well as the feed of his future bull. "Subscriber" has omitted to state whether the calf is one of a dairy or beef breed. If the former, we would not recommend feeding new milk, and instead of the cream add to the skimmed milk oil-cake meal from which the oil has been extracted. Bull calves of beef breeds usually suck their dams and suffer no evil effects. We would say, then, for the coming winter, feed, besides the milk already referred to, a liberal quantity of pulped or stripped roots, or ensilage, together with a few handfuls of chop, mostly oats with some bran and a little pea chop, increased to not more than two quarts per day as he approaches seven or eight months old. Good clover hay should be fed thrice each day in quantities consumed before the next feeding time. The calf should not be tied, but given a roomy, comfortable box stall, with plenty of light and ventilation. An occasional run in the barnyard will also aid his vigor and healthful development.]

JERSEY HERD BOOK.

SUBSCRIBER, Norfolk Co., Ont.:—"Will you be kind enough to distinguish in your next issue between the American Jersey Herd Book and the American Jersey Cattle Club, whether or not one is superior to the other?"

[The American Jersey Herd Book, although established, we are told, as early as 1864, does not enjoy the standing of the American Jersey Cattle Club. The reason of this may be due to a number of causes, but no doubt the laxness of one of their rules, viz., the following, may have something to do with it: "When from any cause a pedigree is defective, the certificate of entry should be endorsed by two or more persons knowing the facts of purity of blood as stated therein." The rules governing the Constitution and By-laws of the American Jersey Cattle Club are of such a high character as to beget implicit confidence in its records. The wealthiest and most extensive cattle-owners in the United States and Canada patronize this A. J. C. C. register. The membership fee of the A. J. C. C. is \$100. The registration fee, to members, of animals dropped in Canada or the U. S., for each male or female under two years old, \$1; entries of males or females under two years old, owned by non-members, \$2; entries of dead ancestors to complete pedigrees, \$1; entries of animals over two years old, double fee; transfer within 90 days of sale and delivery, free; over 90 days, \$1. The fee for recording each animal in the American Jersey Herd Book is \$1; for each transfer, 25 cents, in advance, and is uniform to all. Mr. O. B. Hadwin, Worcester, Mass., is compiler of the American Jersey Herd Book, and J. J. Hemmingway, No. 8 West 17th St., New York City, is Secretary of the American Jersey Cattle Club, from whom further particulars, blank forms, etc., can be obtained.]

DENTITION OF CATTLE.

JOHN M. BARTON, Prescott Co., Ont.:—"Please give me any information you can on telling the age of cattle—one year, two years, and three years old?"

[In the July 2nd, 1894, issue of the FARMER'S ADVOCATE was published a description of the mouth of the ox, with illustrations showing the changes in dentition as they occur. We might say in brief that it is difficult to estimate the age in months of a calf. Up to one year butchers take notice of the growth of the horn, as no change occurs in the incisors, except that which is caused by the wear of the teeth and the growth of the jaw, until the age of one year and nine months is reached, when the two central teeth become loose and the first broad teeth begin to project through the gums. At the age of one year and ten months the two central broad incisors have grown out almost full length, and at two years the sixth and last permanent molar is in position. The first and second permanent molars replace the temporary about a month or six weeks later. From two years and three months to two years and six months the second pair of broad teeth replace the temporary. The third pair of permanent incisors may occur at any time between two years and six months and three years. At three years and three months the corners, or fourth pair of broad incisors, are usually in place, after which time the change that occurs is due to wear.]

Mr. R. Facey, of the Harrietsville, Ont., cheese factory, having probably the largest output of any in the world, has fitted up his establishment for winter buttermaking with a three thousand pounds per hour Alpha DeLaval separator, new boiler, engine, etc.

Now is the time for the readers of the ADVOCATE to get up a club of new subscribers and secure some of our premiums.

LIVE STOCK MARKETS.

Chatty Stock Letter from Chicago.

(BY OUR SPECIAL CORRESPONDENT.)
Following are the current and comparative prices for the various grades of live stock:—

CATTLE.	Present Prices.		Top prices two weeks ago.	
	1896.	1895.	1896.	1895.
1500 lbs. up.....	\$ 4 10 to 5 15	\$ 4 95	\$ 5 35	\$ 6 10
1350 @ 1500.....	3 60 to 5 15	4 90	5 35	6 00
1200 @ 1350.....	3 45 to 5 10	4 45	5 15	5 80
1050 @ 1200.....	3 35 to 4 75	4 20	4 75	5 60
900 @ 1050.....	3 25 to 4 50	4 00	4 60	5 00
Stks. and F.....	2 10 to 3 85	3 40	3 90	3 60
Fat cows and heifers.....	2 90 to 3 75	3 50	4 25	3 75
Canning cows.....	1 30 to 2 10	2 00	2 30	2 25
Bulls.....	1 85 to 3 85	3 00	3 80	4 60
Calves.....	2 75 to 6 10	3 75	6 20	6 50
Texas steers.....	2 60 to 4 10	3 10	3 70	4 20
Texas C. & H.....	2 25 to 2 90	2 50	2 60	2 30
Western steers.....	2 80 to 4 00	3 65	4 45	4 70
Western cows & bulls.....	2 10 to 3 60	3 25	3 75	3 25
HOGS.				
Mixed.....	3 05 to 3 55	3 65	4 00	5 25
Heavy.....	2 95 to 3 52 1/2	3 50	3 95	5 40
Light.....	3 05 to 3 5 1/4	3 60	4 00	5 10
Pigs.....	2 25 to 3 55	3 50	3 90	4 75
SHEEP.				
Natives.....	1 75 to 3 50	3 00	3 90	3 15
Western.....	1 75 to 3 35	2 90	3 10	2 80
Lambs.....	2 40 to 4 90	4 40	4 50	4 00

Mallory, Son & Zimmerman give the following results of inquiries from 5,000 farmers and stockmen as to the crop conditions. The average of these reports, taking last year as 100, are as follows:—

STATES.	Fat Hogs.	Pigs.	Disease Counties.	Cattle.
Illinois.....	95	99	31	88
Iowa.....	89	99	33	89
Missouri.....	93	96	47	91
Wisconsin.....	100	105	3	90
Minnesota.....	101	104	17	79
South Dakota.....	94	99	9	86
Nebraska.....	87	96	29	82
Kansas.....	93	95	17	87
Indiana.....	95	101	49	89
Michigan.....	102	113	6	84
Ohio.....	104	109	18	100
Southern States.....	85	100	3	70
Totals.....	95	100	312	87
Last year.....	92	95	181	96
1891.....	74	95	68

The number of fat cattle in 11 of the corn-feeding States is said to be 9 per cent. less than last year. Iowa reports a decrease of 25 per cent., Illinois 4 per cent., Missouri 12 per cent., Kansas 32 per cent. Ohio reports as many cattle as a year ago. Hogs gain 6 per cent. in Illinois, decrease 3 per cent. in Iowa, and show little change in Missouri.

J. & C. Coughlin, the well-known Canadian exporters, have been buying cattle here since the first of last week, to be shipped via Boston. Last week they secured 577 head, at \$1.30 to \$1.81, and about as many this week, though at a much lower range of values, the market having declined 30c. to 40c. in the meantime.

Supplies of hogs at all the leading Western markets are falling below expectations, and the feeling is much stronger than a while back, with dealers talking \$4 hogs in the near future, but this is the wrong time of the year to bull prices. Of course, if the provision market was advancing rapidly packers would allow the hog market to advance for the time being, to give them a chance to sell futures. Packers don't like to start the winter season on a high basis, and will probably lower prices later on to suit themselves.

The hide market was active, and prices advanced still more this week. No. 1 packer hides, 60 lbs. and up, advanced 3c., selling at 95c. Packers report small supplies on hand, and it looks as though prices will advance still more.

The 187,039 hogs received at Chicago last week, the largest week's receipts since last January, averaged 242 lbs., being the lightest average since the week ending May 9.

C. A. Mallory, who returned from Texas this week, says that only half as many cattle will be fed the coming season as were fattened a year ago, and only about half as many hogs are in farmers' hands as were reported a year ago.

Last month Chicago received 1,307,194 head of all kinds of live stock in 21,873 cars. The Burlington road furnished 7,414 cars, Northwestern 5,089, Milwaukee 3,579, and Rock Island 2,531. Cars received the first nine months of 1896, 206,717, against 188,760 a year ago.

During this week a great many 80 to 140 lb. pigs were received at all the Western markets. They sold largely at \$3 to \$3.40 per 100 lbs., or about the same range as 250 to 400 lb. averages.

Canadian Horses in England.

At the sale of 150 Canadian horses conducted at Messrs. Pritchard & Moore's Canadian Horse Repository, Lamb's Conduit street, London, on Thursday, Oct. 11th, prices were good, some of the animals making £59, £50, £45, £44, £43, £40, £38, £35, £33, etc.

At another important sale of Canadian horses at the Canadian Horse Repository, Lamb's Conduit street, the lots, which numbered over 200, included some useful heavy draft and seasoned harness horses, as well as some very stylish cobs. There was a large attendance in the morning, and some spirited bidding took place, the prices ruling well above the average. Dublin Dan, a gray gelding, six years old, realized 42 gs., a similar price being obtained for a bay mare five years old, while for three guineas extra a bay gelding was sold. The same sum was paid for a five-year-old chestnut gelding. A bay gelding, 16.1, six years old, was sold for 46 gs. The average price for the lots was about 30 gs.

New York Sale of Carriage Horses.

To say that the market for high-class carriage horses is keen would not nearly as clearly express the real condition of the demand as to refer to a sale conducted in New York City by W. D. Grand on October 15th. The lot consisted of a consignment of twenty-seven "show horses" sent from Chicago by M. H. Tickenor & Co. The following figures show that size is only one and not the most important characteristic in a high-priced carriage horse. The following are some of the prices obtained:—A pair of brown geldings, 16 hands high, brought \$2,500; a pair same color, 15 1/2 hands, fetched \$2,500; a single bay gelding, 15.3 1/2 hands, brought \$2,000; a bay gelding, 14.3 1/2 hands, brought \$1,300; and another bay gelding, 14.3 1/2 hands, was sold for \$750. Most of the horses were from 15.1 to 15.3 hands high. The average for the twenty-seven head was \$704. The lowest price paid was \$75, for a brown mare 15.2 1/2 hands in height. While many of the highest priced horses were cobby in make-up, action (before and behind) was strikingly present; not only that, but quite a number hold records of 2.40, 2.30, and as low as 2.20 in one or two cases.

Gov. Morton has appointed Dr. G. Howard Davidson, of Millbrook, and Lyman P. Haviland, of Camden, members of the Board of Control of the New York State Experiment Station at Geneva.

Toronto Markets.

The market is quiet, with receipts heavy; the outlook for business is favorable for the ensuing months.

Export Cattle.—The demand is very moderate, exporters being disheartened with the season's business.

Butchers' Cattle.—This trade is unchanged. Choice cattle in good demand for local use.

Bulls.—Good bulls are selling well. Only good choice bulls fit for export will bring from 3c. to 3 1/2c. per lb.

Stocks and Feeders.—This branch of the trade is very active. Messrs. Dunn Bros. are occupying another stable this year at Messrs. Gooderham's byres.

Sheep and Lambs.—This market is still active. Mr. Craig exported two carloads for Buffalo.

Hogs.—Best off cars sell at 3 1/2c. to 3c. per lb. Thick fat at 3 1/2c. per lb.

Wool.—Market firmer, with enquiry for export. Dealers are paying 20c. to 21c. for fleeces.

Hides and Skins.—The market must very soon take on a good shape, there being a much better demand.

Grain Market.—On the street market one or two loads a day is about the limit of the trade.

Barley.—Only a very slight demand. A few enquiries for export; 1,000 bushels at 31c.; 500 bushels sold at 40c.

Hay.—Twenty loads on market. Only a very limited enquiry. Prices are inclined to be firm at \$13 to \$15 per ton.

Butter.—The supply includes all grades. Poor stuff cannot be sold at any price. Best dairy at from 18c. to 20c. per lb.

Cheese.—Market much firmer; 2,000 boxes for export at 10c., with a further demand expected next week.

Montreal Markets.

There has been no change whatever in the local live stock markets. The heavy receipts of cattle have been kept up without cessation.

Sheep and Lambs.—Exporters have dropped the price of sheep for export account to 2 1/2c. for the best, 1c. per lb. below the last quotations furnished.

Cattle.—The offerings of calves have been very light, and good calves make very good prices.

Live Hogs.—No actual change can be noted in this market, although a few head of choice hogs did realize 10c. and 15c. per cwt. higher than our last quotations.

The Space Market.—This market continues strong and steady, but at no higher figures—15 to 50 shillings, insured.

Hides and Skins.—Since last writing beef hides have been advanced 1c. per lb., and they now stand to butchers at 7c. for No. 1, 6c. for No. 2.

SHIPMENTS.—Cattle—For the week 2,886; last week 2,306; Total to date 5,277.



MR. MEEK'S DINNER.

"I wonder, James," said Mrs. Meek, doubtfully, to her husband one morning, "if you could get your own dinner to-night? You see, I've had to let the servant go on her holidays for a day or two, and they want me desperately at the Woman's Aid and Relief Bazaar, to help them with their high tea from 4.30 to 8.30. If you thought you could manage by yourself?"

"I'll try to survive it," observed Mr. Meek, good-naturedly. "I don't fancy it will prove fatal."

"I'll get a roast and cook it this morning, then," went on Mrs. Meek, cheerfully, "and you can have it cold for dinner."

"Thank you," replied Mr. Meek, "you'll do nothing of the kind. I fancy I haven't gone camping pretty much every year of my life for nothing, I suspect I can manage a hot dinner about as well as most women."

Mrs. Meek had her doubts, and, unlike most wives, expressed them. Mr. Meek viewed his wife's doubts with supreme contempt, and, unlike most husbands, expressed it.

Thus it finally resulted that Mrs. Meek abandoned all idea of preparing Mr. Meek's dinner for him, and betook herself to the Bazaar. So it resulted, furthermore, that Mr. Meek left his office about 4 o'clock that afternoon and proceeded to collect on his way home the necessary supplies for a dainty little dinner.

An alluring display of chickens was the first thing to catch his eye, and he was just on the point of securing one of them when, by good luck, or more probably through the natural sagacity of the moment, he recollected that, though you don't, as a rule, cook chickens as they are. In the momentary reaction that followed this feat of memory he bought a couple of mutton chops and three tomatoes.

"I'll have a good, plain, old-fashioned dinner," thought he, as he hurried past the deceitful chickens with something almost akin to reproach. "None of your finicky poultry dinners for me."

"By Jove!" he exclaimed a moment later, "I'll have an apple pudding, and some oyster soup to begin on."

He was so tickled with this idea that he promptly rushed into a grocery shop and purchased half a peck of their best eating apples and then hurried home without a thought of the cab he was to order for his wife at 8.30 sharp.

By 5 o'clock he had the fire going beautifully, and everything ready for a start.

By 6 o'clock he was just beginning to enjoy the thing; the tomatoes were stewing divinely; the potatoes were boiling to their heart's content, and the milk for the oyster soup was simmering contentedly on the back of the stove.

"Dear me," he thought, "an ambitious gentleman, I wish I had thought of it in time, and I'd have had some oyster patties for a sort of final dessert. Hello! what's this! By thunder, if that everlasting pig-headed woman hasn't left me some cold ham and a custard pie! By the Lord Harry, for two cents I'd throw the whole thing into the back yard!"

The natural docility of his nature, however, prevailed, and he left the obnoxious viands un molested, and proceeded with his dinner. At the chops on to broil, "as in the good old days of yore"—this poetic allusion to the style of cooking being occasioned by one of them accidentally dropping into the fire, whence he rescued it with great presence of mind by the joint assistance of the stove-lifter and one of the best table-napkins. By the time the chop was thus rescued both he and the table-napkin were very well and happy, nothing stronger.

It was now about 7.30, and the fire was getting hotter than pretty much anything on earth, unless, perhaps, it was Mr. Meek. He turned all the taps, opened all the doors, and took off all the lids. This resulted most satisfactorily, and the fire began to cool. It didn't stop.

It got, if anything, a little low. After that it got very low. Then it went out. He rushed for kindling, and nearly took his head off on a clothesline. Just as he got nicely through expressing his views on clotheslines in general, and that clothesline in particular, he went about twice as far toward taking his head off on the same clothesline on his way back.

The gentlest of natures when roused are often the most terrible. Mr. Meek became very terrible. He used up enough kindling, profanity, and coal oil to have ignited the Pyramids of Egypt. He stamped and shoved, and poked and banged, and cursed and abused with him, and departed to the outer kitchen to try the oysters, which the dilatory grocer had just deposited on the table without waiting to parley with Mr. Meek. He was a wise grocer and had heard enough.

When, about five minutes later, Mr. Meek discovered that the cat had found the oysters to its taste, he became even less calm. Had the cat been around (but, like the grocer, it is probable that a considerable majority of its nine lives would have come to an abrupt termination).

At this stage, to console the unfortunate man, the fire began to go again. Once started, it didn't stop. In about five minutes it had burnt up what remained of pretty much everything except a large pot of green tea and a small portion of Mr. Meek. The chop that the cat hadn't eaten was especially well done. It could be quite safely left on the window sill with a whole legion of cats around it. Mr. Meek, however, simply left it in the coal bin. In point of either color or hardness it would have been difficult to have found a more fitting resting place for it.

Then there came over Mr. Meek's face a terrible expression. He brought in a pad (it was a scrubbing pail which he had mistaken for the scrap pail, but no matter) and poured the contents carefully into it, throwing the pan about five feet, into the sink; next he scraped the potatoes into the same pail, and again another pan followed the course of the first in getting

to the sink; then he poured the tomatoes on top of the potatoes, and still a third pan got to the sink with unusual rapidity. It cannot be definitely stated whether or not Mr. Meek, in doing this, was actuated by the desire to prepare some famous hunter's dish relished in the dear old camping days gone by, but certain it is, no sooner did he get the tomatoes nicely on top of the potatoes than he took the whole thing and tossed it, pail and all, into the outer lane.

This accomplished, he proceeded to make a meal off the cold ham and some bread and butter—the cooking butter, of course.

Just as he was finishing, Mrs. Meek returned. "Why, James," she cried, cheerfully, "you never sent the cab for me and I waited nearly an hour."

"No," said her husband, calmly. "I've been terribly busy. Men from New York—just got home a little while ago. This is a very good ham—a shade overdone, though, isn't it?"

"Perhaps a shade less wouldn't have hurt it. Let me get you a piece of pie!"

"No, thank you! No cold pie for me when there're hot apples in the oven. I'll tell you what you might do; you might bring 'em in if you're not too tired."

Mrs. Meek departed on her mission. In a few moments she reappeared, and, without moving a muscle, placed the plate of baked apples before her lord and master. They were about the size of walnuts and the color of ebony. Judging by the way they rattled on the plate they were rather harder than flint.

Mr. Meek arose with an awful look in his eye. "I'm afraid," observed his wife, "they're like the ham—just a shade overdone."

"If ever I catch that cat," remarked Mr. Meek, as that sleek feline purred past him with a playful frisk of his tail, "I'll break every bone in its body"—only he described its body with sundry adjectives that were very strange to the ears of Mrs. Meek. At least, so she said when she described the occurrence to her bosom friend, Mrs. Muggins, next day.—Truth.

Counterfeit Compliments.

BY MRS. HAMILTON MOTT.

There is a great deal for us to hear and to learn about ourselves that is disagreeable, so long as we are human and consequently imperfect beings. The choice is between knowing our defects—a fault understood is half cured—or hugging ourselves in the conviction that we are as tasteful, as well-bred, as intelligent and high-minded as we should or can be, and making ourselves ridiculous often in this belief. Nothing is so supremely absurd as a little mutual admiration society of such a kind, or so treacherous, let me add. The selfishness of human nature is there under the pleasant flatteries and soothing manners, and no persons have their sensibilities and self-love so easily scratched as your hyperamiable folks who can scarcely bear to hear you speak against the east wind, because it blows where they came from. The ingrained truth-tellers, who speak truth from instinct and obligation, are the kindest, most self-sacrificing and most faithful of friends. They say disagreeable things when the saying is necessary, and it costs them much more to speak them than to lend their last hundred dollars. Unduly disagreeable things are often no more the truth than the fictions which we call politeness. The end of truth is neither to please nor to displease, but to say the thing, which is, and to avoid saying the thing which is not. When we are asked for bread are we to hold out in return the empty hand, or give the stone wrapped in paper and nicely tied? We would not pass counterfeit coin for worlds; how is it then that we are not ashamed of passing counterfeit opinions and compliments daily? Harsh language, do you say? We are growing so finical that we scarce dare to speak of the meridian crossing the equator for fear of hurting the feelings of either the equator or the meridian. The definition of a lie is "an untruth told with intent to deceive," and false opinions answer this description as thoroughly as anything else.

Truth-telling people are not so pleasant to spend a quarter of an hour with as flatterers, but they wear better to the end of the twenty-four. I know a woman who has the art of accidentally saying in conversation the nicest things, things that make you want to put your arm about her, or kiss her hand in thanks. You hear her say openly one day that she is fond enough of hearing pretty things not to care whether they are genuine or not, and your folly is not so superlative that you can take much comfort in her favor after that. You come to know the counterfeit nickel, no matter how bright it is, and soon despise people who are passing spurious coin on you every day. Two or three busy men I know who look up from their desks to give me unqualified sincerity of opinion, whether I like it or not; I would not part with their friendship for their weight in gold. One girl I know, still at school, has such a lovable, friendly way of telling the candid truth—telling it as though she thought too much of you to possibly do otherwise—that hearts cleave to her and love goes with her steps, and will to the end of her pilgrimage. Telling the truth is love. Here is the secret of character, the great secret which girls and women need to learn anew. Truth, even in little things, is the soil in which love roots deep and branches wide.

Recipe for Turnips Stewed in Butter.

Take some young turnips, wash and dry them, pare them, slice them to half an inch thick and divide them into dice; now dissolve one ounce of butter for each half pound of turnips, stew them gently for nearly an hour; when half cooked add salt and white pepper to taste. These can be served by themselves or dished up in the center of an entree.

"What is the greatest difficulty you encounter in a journey to the Arctic regions?" asked the inquisitive man. "Getting back home," was the prompt reply of the professional explorer.

(Now, mind, I'm simply telling you
What the old Dutch clock declares is true.)

The Chinese plate looked very blue
And wailed, "O dear, what shall we do!"
But the gingham dog and the calico cat
Walloped this way and tumbled that,
And utilized every tooth and claw
In the awfulest way you ever saw;
And oh, how the gingham and calico flew!

(But don't think that I exaggerate—
I got my news from the Chinese plate.)

Next morning where the two had sat
They found no trace of the dog or cat,
And some folks think unto this day
That burglars stole the pair away;
But the truth about that cat and pup
Is that they ate each other up.
Now, what do you really think of that?

(The old Dutch clock, it told me so;
That is how I came to know.)

"My Mail."

What hypocrites these mortals be!
When Justice wields her scales,
Good soul, she marks with special glee
The perjuries of the mails.

A score of letters heap my plate
At breakfast-time to-day,
My appetite to moderate,
Or, haply, take away.

Now, here's dissembler number one.
What curses deep and fervent
Went with the writing of this *dun*,
Signed "Your obedient servant!"

And here I sent a wedding gift;
My lady thanks me duly,
Nor mentions how she slightly sniffed;
She's still mine "Very truly."

My married sister gives advice:
"You've grown quite boorish lately;
Your taste in dress is far from nice.
Yours, most affectionately!"

The humors of the case increase.
May's mother hates me dearly—
Writes that my frequent calls must cease,
And signs it "Yours sincerely."

And in this missive, folded small—
Thus Fortune flouts us woefully—
May says she can't be mine at all,
And then she signs it "Yours!"

UNCLE TOM'S DEPARTMENT.

MY DEAR NEPHEWS AND NIECES,—

The leafless trees, the autumn serenity, and the cold, bleak November weather are generally associated with solemn, mournful thoughts; and, though not generally given to such, a feeling of retrospection possesses me, which is, perhaps, a melancholy pleasure. How the earlier scenes of life impress themselves on one's memory, and how fondly we cling to the things loved in youth!

Apart from the sacred years of infancy—the years spent at the mother's knee—there are, perhaps, no memories quite as dear as those of our schooldays, no other place more loved than the unpretentious building which was our Alma Mater, and no friends holding quite the same place in our affections as those who there shared our pleasures or our childish troubles. Looking back upon the old scenes, a sense almost of loneliness comes over me as I see the great changes wrought by time. I used to think how appropriate were the lines of the old poem "Twenty Years Ago"—

"The benches are replaced
By new ones very like the same our penknives had defaced;
The same old bricks are in the wall

—but I no longer find pleasure in them, for the poor old school has been torn down, the desks and bricks handed over to the highest bidder and scattered here and there like the old-time companions.

Nothing remains the same save the sentinel elms, from whose drooping branches we often swung, and the crooked creek where, at the expense of an occasional dip to a bad steersman, we used to sail our rudely-constructed "rafts," or "floats." Even the road itself has undergone a transformation: in the summer the grass grows green and thick on the narrow path once worn gray by our bare feet, and the elm saplings that nestled close to the familiar rail fence have been cut down, because, forsooth, a new fence was required and they happened to be "in the way." Ah, those trees! They grew up with me and seemed almost a part of myself, I loved them so. When Jack and I traversed the well-worn path we could easily reach their slender tops, but how far behind they left us! They became large trees, and when caressed by the soft breezes many and sweet were the whispers of "ye olden time" that they murmured to me. Now that piece of road looks so desolate that I recall the words:

"All that's bright must fade,
The brightest still the fleetest;
All that's sweet was made
But to be lost when sweetest."

But there, I hear you exclaim, "Well, what a mood for Uncle Tom to be in!" and it does seem rather inconsistent with that personage. The remembrance of the loss of his trees has made him doleful, perhaps, but do not blame too severely the poor old fellow. One does not easily become reconciled to the loss of the faithful friends of childhood.

Perhaps it is better to look forward than backward. Looking forward, what do I see? Thanksgiving and Christmas in the near future (I hope

you are all trying to write a story on the latter), and glorious avenues of life opening out before each of my own dear boys and girls if they will only choose to walk therein. How it pleases me to be made their confidant and to hear the fond aspirations that fill their buoyant hearts! That every noble aim may be most fully realized is the Thanksgiving greeting of your loving—
UNCLE TOM.

Puzzles.

All puzzles should be sent direct to ADA ARMAND, Pakenham, Ont., who has charge of this department.

1—CHANGED HEADING.

I'm sorry, Master PRIMAL Charles,
To have given you cause to complain;
Laziness 'praps was partly the cause
That kept me from puzzling again.

I did not mean to stay away,
Let alone for so long a time,
And lately twice have made the attempt
To send along some rhyme.

YOUR ANAGRAM I tried to solve
One day; 'twas just begun
When a friend came in, who meant to stay,
And so 'twas left undone.

Hereafter FINAL I'll try to be,
And send puzzles not a few,
Hoping you won't in future name
The "slipper or the shoe."

LILY DAY.

2—CROSS LETTER ENIGMA.

MY FIRST is in strive, but not in contend;
MY SECOND's in split, but not in rend;
MY THIRD is in act, but not in perform;
MY FOURTH's in reptile, but not in worm;
MY FIFTH is in noise, but not in talk;
MY SIXTH's in ramble, but not in walk;
MY SEVENTH's in spice, but also in spoil;
MY EIGHTH's in labor, but not in toil.
All under the MAPLE LEAF know well
The word that the proper letters spell.

3—TRANSPOSITION.

Herr Schmidt sat up in his ONE armchair,
While his feet reposed on a settle soft;
And he quaffed his two with a lordly air,
Then his meerschaum filled with the utmost care;
And produced with his tinder a tiny flare
Which sent the blue smoke curling aloft.

Herr Schmidt leaned back in his chair so stout,
And he watched the smoke, in a dreamy dose,
Till the vapor pictured his past life out,
When he lived at court, in the THREE and rout,
And splendor FOUR;—but a twinge of gout
Disturbed the vision, and his repose.

CHARLIE S. EDWARDS.

4—HALF SQUARE.

My first's the brightest star perceived,
The fairest of the fair;
My next, in China, hath received
Of heathen worship there;
My third is where our names reposed,
Without a blot or stain;
My fourth's a word applied to those
In sickness or in pain;
My fifth will mean just you and me;
My last's the last of St. Louis.

CHARLIE S. EDWARDS.

5—TRANSPOSITION.

- (a) My first is juicy and sweet;
My second, if raw, we don't like to eat.
(b) My first is an adverb of time;
The base of my second's as round as a dime.
(c) My first is the name of a youth;
My second is as white as a tooth.
(d) If you are my first, you'll be laid on a berth.
Now for my second, it's a township in Perth.

JOHN S. CRERAR.

6—ENIGMA.

My first and my second is each a name,
But my first and my second are not the same;
For my first is a boy's name, my second a girl's,
And my whole is a bone and not a pearl.

JOHN S. CRERAR.

Answers to Oct. 1st Puzzles.

- 1—GRANT 2—Bay.
- R A Z O R 3—Aristotle—rotalites.
- A Z U R E 4—Reprimand.
- N O R S E
- T R E E S

SOLVERS OF OCTOBER 1ST PUZZLES.

John S. Crerar, Ada M. Jackson, Clara Robinson.

To be Thwarted.

"The best thing often that could happen to a man is to be thwarted in his favorite hopes. The old song that has the hope that in time of old age we may find one face at our fireside whom we loved when we were young; but I would say, far rather than this: 'God grant that we may find Him there in the home of our darkened life.' Then all else will seem to us but dross. When a man has nothing more to lose; when his hopes are all beyond the grave; when we listen without terror to the ebbings and flowings of the tide of life and the rush of its storms—then after the night to us the day will come back, and after the tempest a great calm. We know that it is God's work, and that God loves us better than we can love ourselves. We know then that all our life is guided by Him, so that we find consolation and contentment; and if we have those two things with us—consolation in our sorrows and contentment in any loss—we have the richest blessings which God can give us."
—Archdeacon Farrar.

Farmer Hayrake—Did your son learn anything at college? Farmer Ostrow—Yes; I gave him a hammer to mend the barn with, and he threw it so far I hain't been able to find it.

THE QUIET HOUR.

"The Master's Call."

They tell me a solemn story, but it is not sad to me,
For in its sweet unfolding my Saviour's love I see;
They say that at any moment the Lord of life may come,
To lift me from this cloudland into the light of home.
They say I may have no warning; I may not even hear
The rustling of His garments as He softly draweth near;
Suddenly, in a moment, upon my ear may fall
The summons to leave our homestead, to answer the Master's call.

Perhaps He will come in the noontide of some bright and sunny day,
When, with dear ones all about me, my life seems bright and gay;

Pleasant must be the pathway, easy the shining road,
Up from this dimmer sunlight into the light of God,
Perhaps He will come in the stillness of the mid and quiet night,

When the earth is calmly sleeping 'neath the moonbeam's silvery light,
When the stars are softly shining o'er slumbering land and sea;

Perhaps in the holy stillness the Master will come for me,
Methinks I would rather hear it, that voice so low and sweet,
Calling me out from the shadows, my blessed Lord to meet,
Up through the glowing splendors of a starry, earthly night,
To "see the King in His beauty," in a land of purer light.

Death is Yours.

Christian, here is a precious legacy left thee by the Lord—a covenant gift from the God of thy salvation. Death is yours. He is your conquered enemy—your faithful friend.

1. Your conquered enemy. You need not fear him. He has neither strength nor sting. Christ, the victorious Captain of your salvation, has disarmed him of both; he can neither destroy nor wound your soul. Yea, "He has abolished death." There is no substance in Him. He is changed into a shadow. It is not the enemy, death, which seizes a believer, but the shadow or emblem of it—sleep.

Weary soul, tired out with the burden of sin, lusts, corruptions, afflictions, accusations, temptations, etc., is sleep an enemy to you? Do you dread sleep? Are you afraid of rest? What! Fear to fall asleep in Jesus, to awake in His presence, to be satisfied with perfect likeness to Him, and eternally enjoy Him? "O fools, and slow of heart to believe" the victory of Christ over death!

And thou, too, O my soul, take the rebuke to thyself, and be ashamed of thy folly! "But I am not afraid of death, but of dying." Why? Afraid of sleeping? or for the insupportable pains of the body in that hour? Who told you they are insupportable? How many have sweetly sung "Victory!" in death.

"Oh," says one, "is this dying? Oh, it is sweet—it is pleasant!" "Though I pass through the valley of the shadow of death, Thou shalt be with me." That is the claim of faith, upon the warrant of the Lord, "When thou passest through the waters, I will be with thee." The presence of the Saviour will beguile all thy pains, and fill thy soul with comfort, for—

2. Death is thy faithful friend. Hast thou not found sleep so to thy weary body? Just so, and no more is death to thy weary soul. It will at once deliver thee from all thy burdens and sorrows, and introduce thee into joys unspeakable and full of glory. Death is that and no more to the soul than what God calls it in His Word and faith makes it to the heart. If you do really and truly believe that death is swallowed up in the victory of Christ—if you firmly believe that His precious blood has atoned for sin, and His righteous life has fulfilled the law—you may undoubtedly sing, "Oh death, where is thy sting? O grave, where is thy victory?"

"Life and Death."

What wonder, when the training of the schools
Has done such work as schools and lessons can;
When through the discipline of tasks and rules
The boy compact, expands into the man,—
If to the field the Father bids him come,
Where manhood's earnest standards are unfurled,
Is not the school an exile from the home?
Is not the school the threshold of a world?
This earth is but for learning and for training;
Earth's highest work, but such as children do;
The workmen here their priceless skill are gaining,
The true life-work is *ponder*, out of view.
... This life doth but our life begin,
Is but outside the porch of the abode,
And death the going home—the entering in—
The stepping forth on the wide world of God.

"Two."

I dreamed I saw two angels hand in hand,
And very like they were, and very fair:
One wore about his head a golden band;
A thorn-wreath crowned the other's matted hair.
The one was fair and tall, and white of brow;
A radiant spirit-smile of wondrous grace
Shed, like an inner altar-lamp, a glow
Upon his beautiful uplifted face.
The other's face, like marble carved Grief,
Had placid brows laid whitely o'er with pain,
With lips that never knew a smile's relief,
And eyes like violets long drenched in rain.
Then spake the fair sweet one, and gently said:
"Between us—Life and Death—choose thou thy lot.
By him thou lovest best thou shalt be led;
Choose thou between us, soul, and fear thou not."
I pondered long. "O Life," at last I cried,
"Perchance 'twere wiser Death to choose; and yet
My soul with thee were better satisfied!"
The angel's radiant face smiled swift regret.
Within his brother's hand he placed my hand,
"Thou didst mistake," he said, in underbreath,
"And choosing Life, didst fail to understand.
He with the thorns is Life, and I am Death."

"Pressed Flowers from the Holy Land."
(GATHERED AND PRESSED IN PALESTINE BY REV. HARVEY B. GREENE.)

The above is the title of a perfect little gem of a book, which is sure to be admired by all readers of the FARMER'S ADVOCATE. It contains twelve full-size pages of beautifully-mounted flowers gathered in the Holy Land, and so faithfully are the colors and exact forms of these flowers retained that they seem more like some exquisite paintings than the flowers themselves.

The names are familiar to all of us, but as it is permitted to few disciples to visit the Holy Land, few, therefore, can realize the beauties of the lovely flowers so frequently noticed and tenderly spoken of by our Saviour. Pointing to the field lilies which grow so luxuriantly about the environs of Jerusalem, He said, "Even Solomon in all his glory was not arrayed like one of these." All through the book the different flowers suggest to us some words of Christ, even to the very grass of the field. "If God so clothe the grass of the field, shall He not much more clothe you?" The mustard, the hyssop, the flax are full of deep interest to all, and particularly to botanists. A full description of each plant, with its Biblical and botanical names, makes the book valuable to all students of botany, whilst its lovely illustrations and pretty green and gold binding render it a choice addition to our favorite books. This would make a charming birthday souvenir or Christmas gift to a friend. Given to any one sending us the name of one new paid subscriber.

The Scorcher.

He tumbled from his weary wheel,
And sat it by the door;
Then stood as though he joyed to feel
His feet on earth once more.
And as he mopped his rumpled head,
His face was wreathed in smiles;
"A very pretty run," he said,
"I did a hundred miles!"

"A hundred miles!" I cried. "Ah! think
What beauties you have seen!
The reedy streams where cattle drink,
The meadows rich and green.
Where did you wend your rapid way—
Through lofty woodland aisles?"
He shook his head. "I cannot say,
I did a hundred miles!"

"What hamlets saw your swift tires spin?
Ah, how I envy you!
To lose the city's dust and din,
Beneath the heaven's blue;
To get a breath of country air;
To lean o'er rustic stiles!"
He only said, "The roads were fair;
I did a hundred miles!"

—From *Munsey's Magazine*.

On the Stair.

We sat on the stair, she and I,
And the music came dreamy and low;
And sweet was the light in her eye
And charming her cheek's rosy glow.

Silent we sat on the winding stair,
Far from the maddening crowd,
An incense rose up from her hair
And came like a perfumed cloud.

"It's really too bad," I said to her,
As I gently stooped and kissed her,
"That you are not some other girl
Than my young pretty sister."

"Canada's Glory."

Our New Premium Engraving receives an enthusiastic reception—Commendations from all parts of the world, by leading Educationists, Agriculturists, Railway Men, Breeders, Experimenters, Citizens, and the Press.

From Sir William Van Horne, President C. P. R.

My Dear Sirs,—I am greatly obliged to you for sending me a copy of your most attractive engraving, "Canada's Glory," which shall be duly honored with a frame, for it deserves to be well preserved.

Yours truly, W. C. VAN HORNE, Montreal.
The Canadian Pacific Railway Co.

"Will Educate to a Higher Ideal."

Gentlemen,—Allow me to thank you most heartily for the beautiful engraving which has come to hand in good order. Such works of art will do much to educate the farmers to a higher ideal, while at the same time increasing their love for fine art pictures. Your donation will be framed and hung in a conspicuous place.

Very sincerely yours,
I. P. ROBERTS, Ithaca, N. Y.,
Director Cornell University, College of Agriculture.

"Admired by All Horse Lovers."

Dear Sirs,—I am duly in receipt of "Canada's Glory," which you were so good as to send me. I think the picture is a good one, and will be much admired by all horse lovers, and especially our own breeders. Thanking you for your kindness,
Yours very truly, ROBT. DAVIES, Toronto.
Thorncliff Stock Farm.

"An Incentive to Good Horse Breeding."

Gentlemen,—I take pleasure in acknowledging receipt of a copy of your premium light horse engraving, "Canada's Glory." I do not hesitate to say that the illustration is artistic in workmanship, and that its distribution will undoubtedly create an incentive to good horse breeding.

GEO. WM. HILL, Washington, D. C.,
Chief Div. of Publications, U. S. Department of Agriculture.

Delighted with "Canada's Glory."

Dear Sirs,—Your excellent light horse engraving came to this office during my absence. I now hasten to thank you, and to say that I am truly delighted with "Canada's Glory," and will not fail to have such a work of art framed to adorn this office.

Yours truly, B. W. CHIPMAN,
Secretary for Agriculture, Nova Scotia.

The Portraits "Good and True."

Dear Sirs,—I have received the engraving of light horses entitled "Canada's Glory." It is a fine picture in its workmanship and grouping, the latter most difficult, but which your artist has successfully accomplished. Several of the subjects I well know, and I must say the likenesses of those are good and true.

RICHARD GIBSON, Delaware, Ont.
Belvoir Stock Farm.

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THE GLOBE ANNUAL AND ENCYCLOPEDIA for 1897.

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Information on all points, political, statistical, historical, mineral, trade and commerce, etc.

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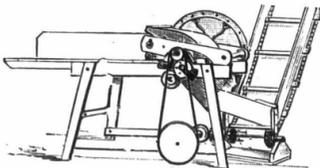
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Weighing from 1,650 to 1,800 pounds, and their colts from 1 to 3 years old. CHOICE YOUNG YORKSHIRES (BOTH SEXES).

Aged Heavy Draft Mares
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For sound workable stock. These mares are from 1,300 to 1,800 pounds; good bone; well bred, and most suitable to work a farm and breed from. Apply to **HENDRIE & CO. (Ltd.),** HAMILTON, ONT., Cartage Agents for G. T. R. 19-0-om

THE GLEN STOCK FARM
Our stock comprises Clydesdales, Ayrshires, and Shropshires. High class Ayrshires a specialty. We are making a special offering of ten very promising young bulls, and a number of very choice cows and heifers of the heaviest and richest milking strains, any of which will be sold at very moderate prices. We also have Rough-coated Scotch Collies for sale, eligible for registry. 7-y-om **WHITESIDE BROS.,** INNERKIP, ONT.

THE GRAND VALLEY STOCK FARM
G. & W. GIER, Props., Grand Valley, Ont. Breeders of Short-horns and Imp. Yorkshires. We offer for sale young bulls, cows and heifers of choice breeding and good quality at very low prices; also choice young Yorkshires of both sex. 13-y-o

HAWTHORN HERD
OF DEEP MILKING SHORTHORNS.
FOR SALE—Four young Bulls, three reds and one roan; also Heifers, all got by Golden Nugget—17548—, and from AI dairy cows. **WILLIAM GRAINGER & SON,** 13-y-om Londesboro, Ont.

H. I. ELLIOTT, DANVILLE, P. Q., Breeder of Scotch Shorthorns and Southdown Sheep. 15-1-y-o

GOSSIP.
John Miller, Markham, Ont., has a long-established herd of Shorthorns of prime quality. His offering of young bulls and heifers in this issue should command some attention, not only for their desirable quality and pedigrees, but for the moderate prices Mr. Miller is prepared to take for them, as he really wants to sell.

F. Birdsall & Co., Birdsall, Ont., write:—“We have exhibited our stock at the four local fairs and met with great success. Our Jersey and Shorthorn calves are especially good, having won good prizes. Our Oxford sheep were much admired and secured the bulk of the prizes competed for. We have recently made the following sales: 25 Oxfords to Wm. Coad, Hastings, P. O.; 1 ram to H. M. Fowlds, Esq., Hastings; 1 ram to Mr. Skinkle, Rosemeath; 1 ram to Mr. Brown, Rosemeath; 1 ram to Mr. H. Neilson, Westwood; 1 Shorthorn calf to William Wilson, Brickley; 1 Chester White pig to John Bathgate, Villiers; 1 Oxford ram to Richard Griggs, Laurel, P. O.”

SECOND ANNUAL LIVE STOCK SHOW

OF **DRAFT HORSES, PONIES, CATTLE, SHEEP, DAIRY PRODUCTS, AND FAT STOCK,** ETC., Under the auspices of the National Association of Exhibitors of Live Stock, MADISON SQUARE GARDEN, NEW YORK, **Nov. 23rd to 28th,** 1896.

\$10,000 in Premiums and Prizes. Entries close Saturday, November 7th. For Prize List and Entry Blanks, address **FRANK W. SANGER,** Manager, Madison Square Garden, New York City, N. Y. 21-b-om

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SIMMONS & QUIRIE.
Shorthorn Cattle, Berkshire Swine—Money-making Borts.
The imported bull, **BLUE RIBBON** = 17095 = (63736), by **ROYAL JAMES** (54972); dam **ROSELINTY**, by **GRAVESEND** (46461), heads the herd. Strathallan, Golden Drop and Mysie families. The Berkshires are choice prize-winning stock. Easy to feed, quick to sell. Stock for Sale. **C. M. SIMMONS, Ivan P. O., Ont.** 1-1-y-om **JAMES QUIRIE, Delaware, Ont.**

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of young Shorthorn females, in calf to the grand young Scotch pedigree Shorthorn bull, Perfection's Hero = 20981—, a grandson of Old Lovely 19th (Imp.), at extremely low prices.

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AYRSHIRE BULLS fit for service; one out of Ada No. 882, winner of first and two special prizes at Provincial Dairy test, Guelph, Ont., 1895. Imp. **POLAND-CHINA** pigs of all ages. **W. M. & J. C. SMITH,** Fairfield Plains, Ont. 19-1-y-om

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Shorthorns, Shropshires, and Berkshires
Offers for sale a choice lot, consisting of eight young bulls, 40 one, two- and three-year-old ewes, sixteen yearling rams, and twenty ram lambs, and a choice lot of Berkshires. Big bargains will be given for the next thirty days, as I want to reduce stock before winter. 15-y-om

CARGILL HERD OF SHORTHORNS.

Six young Bulls, and as many heifers as you want, all bred in the purple. Come and see them or write. **H. CARGILL & SON,** Cargill Stn., P. O. Station on the farm. 11-y-om

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Shorthorn Cattle, Poland-China, Duroc-Jersey, and Chester White Swine, and Leicester Sheep. We now offer for sale five good young bulls, and also heifers of choice quality and breeding, sired by Chief Captain, a son of Indian Chief. Young pigs of both sexes & all ages at exceedingly low prices.

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First-class Color. First-class Form. First-class Pedigree. THIRD-class Price.

Full particulars cheerfully given. Address: **JOHN DRYDEN,** 19-b-om BROOKLIN, ONT.

SHORTHORN BULLS

I have six young bulls, got by Aberdeen (Imp.); good ones. One is a full brother to the champion heifer at Toronto and Ottawa fairs this fall; also some fine young heifers. Write for prices, or, better, come and see them.

JOHN MILLER, Markham, Ontario. Stations—Loose Hill, C. P. R. Markham, G. T. R.

FOR SALE—Young Shorthorn bulls and calves; also a grand lot of **BERKSHIRES** from spring litters. **John Raley, Jr.,** Lennoxville, Que. 17-1-y-o

Willow Bank Stock Farm
—1855 to 1896.

One of the oldest established herds in the Province, heavy milking qualities being a special feature of the herd. A number of choice young bulls and heifers for sale at reasonable prices. Address: 21-1-t-om **JAS. DOUGLAS, Galedonia, Ont.**

BRAMPTON JERSEY HERD

A J. C. C. for sale.—Special now on hand: Two-year-old bull, Duke of Exmor 2nd—solid fawn, grand dairy type; from imported dam and sire. He is sure, active, and cheap. Also, registered and high-grade two-year-old heifers, bred to Sir O'Hila. Four bull calves. Our herd show constitution, conformation, and provincial fairs, which have made it so successful at the Provincial fairs. Solid color. Prices right. 21-1-y-om **B. H. BULL & SON, BRAMPTON, ONT.**

MAPLE CITY HERD OF JERSEYS.

For Sale.—Bull dropped July 20th, 1895; solid color, black points; sire Massena's Son 17008, dam Lady Lill 06164. Bull dropped Aug. 23rd, 1895; solid color, black points; sire Massena's Son 17008 (whose dam made 902 lbs. 3 ozs. of butter in one year), dam Forest Fern. 3-1-y-o **WM. W. EVERETT, Box 552, Chatham, Ont.**

FOR SALE!

A choice lot of Jersey Heifer Calves (pure bred and high grades); good colors, and from rich, heavy milkers. Their dams have averaged the past year 330 pounds of butter each, and all sired by "Canada's Hero," whose dam gave 19 lbs. 5 ozs. in seven days. For prices, write to **W. C. SHEARER, Bright, Ontario.**

The Don Herd of Jerseys

Comprise the choicest strains obtainable, including St. Lambert, Tennessee and combination blood. A m now offering a few very choice bull calves from imp. and home-bred dams, and sires of best breeding obtainable. Address: **DAVID DUNCAN,** 9-1-y-om DON P. O., ONT.

The Etrick Herd of Jerseys.

MESSRS. HUMPIDGE & LAIDLAW, PROPRIETORS, LONDON, ONT. Herd Comprises 35 head of High-class Stock. We are now offering several exceptionally fine young bulls, including grand bull calves and yearlings out of Prince Frank 33972; also a very fine two-year-old bull, and choice heifers. Nothing but choicest quality kept. Can supply show stock. Prices right. Write for particulars. 13-1-y-om

A. J. C. C. JERSEYS FOR SALE.

Young cows and heifers in calf, heifer calves, bull calves, from rich and deep milking ancestry. Testing from 5.60 to 9.00, official test. Prices to suit the times. **H. E. WILLIAMS,** Sunny Lea Farm, 17-1-y-om KNOWLTON, P. Q.

BOOK TABLE.

The Ohio Poland-China Record for 1896 is Volume No. 18. The Secretary of the Association is Carl Freigau, Dayton, Ohio. The boars recorded in this issue are Nos. 36,663 to 39,343, and sows, Nos. 90,754 to 96,814. The book is excellently prepared and illustrated with portraits of a number of typical animals. Poland-China interests must be flourishing over the way.

The Standard Poland-China Record, of which Mr. G. F. Woodworth, Maryville, Missouri, is the able Secretary, has reached its 10th volume, which is a ponderous and well-prepared number, well printed and bound. The pedigrees of boars registered in it number from 13,428 to 15,824, and sows, Nos. 31,576 to 37,250. Surely a monster year's registrations for one breed in one of a number of American Poland-China Records!

A brief history of the Shropshire breed of sheep has been prepared and issued in pamphlet form by Mr. Alfred Mansell, College Hill, Shrewsbury, Shropshire, Eng. The claim is made in it that the Shropshire sheep are descended from a breed known to exist in Shropshire and Staffordshire for upwards of a century. The public appearance of this sort of sheep in the Royal show-yard in 1853 is claimed to have been the turning point with the breed. In 1882 a meeting was called of leading Shropshire breeders, who formed themselves into the Shropshire Breeders' Association and Flock Book Society. Since that time fourteen volumes have been published by the above Society.

The Dominion Shorthorn Herd Book, Vol. XII, is now ready for distribution. The number of pedigrees contained—3,250—augurs well for the future of this noted breed in Canada. This number includes the pedigrees of 100 bulls and about as many cows; the manuscript of which was destroyed in the late fire. Such will continue to appear in future volumes as they are sent in to the office. The bulls of the present volume number from 18,972 to 22,520, and cows, 26,358 to 27,827. The 1895 Shorthorn premium winnings are given in the volume. The book itself is of a highly commendable character in binding, printing, etc. H. Wade, Parliament Buildings, Toronto, is the Registrar.

NOTICES.

If a thousand farmers' sons were aware of the contents of a booklet I have to send them, I would be unable to provide room in the college for their accommodation. I have a thousand of these pamphlets to send out to applicants during the months of November and December. Address the post-card to Principal McCullough, of the Hamilton Business College, Hamilton, Ont. Mention the FARMER'S ADVOCATE.

A HINT TO HORSEMEN.

If horses are to have the run of the yards for the winter they will need careful attention on one point particularly before being turned out. Having been used steadily at work, either on the farm or road, they will have quite likely had some strains whereby lameness or enlargements have been caused. Or perhaps their legs will need stimulus. Gombault's Caustic Balsam, applied as per directions just as the horse is being turned out, will be of great benefit; and this is the time when it can be used very successfully. One great advantage in using this remedy is that after it is applied it needs no care or attention, but does its work well and at a time when the horse is having a rest. Of course it can be used with success while horses are in the stable, but many people in turning their horses out would use Caustic Balsam if they were reminded of it, and this note is given as a reminder.

VETERINARY COLLEGE OPENING.

The opening lecture of the present winter session of the Ontario Veterinary College, Toronto, was delivered on October 14th by Dr. J. T. Duncan, a member of the faculty. The chair was taken by Dr. Andrew Smith, President of the College, and several prominent citizens graced the occasion with their presence. Dr. Duncan has recently returned from England, where he has been taking a special course of instruction. His remarks dealt principally with the history of the veterinary profession, and contained much good practical advice to the students, who comprised the major portion of his audience. The college term opens this season with a good class list, which, while not quite so numerous perhaps as in some former years, is still of highly satisfactory proportions. Students have registered from all over Canada, from most of the States in the Union, from the West Indies, and even from England. The 1896-7 annual announcement of the above institution, containing names of graduates, can be had from the Principal, Prof. Andrew Smith, F. R. C. V. S. It is well known that this institution stands at the head of its kind in America, and is being yearly patronized by numbers of foreigners. More than half the graduates up to date have been from the United States. With regard to the staff of professors, their equals would be hard to find. They consist of Principal Smith, F. R. C. V. S.; T. Thorburn, M. D.; G. A. Peters, M. B., F. R. C. S.; C. G. Richardson, F. G. S.; J. T. Duncan, M. D., F. R. S.; J. Cavan, M. D., L. R. C. P.; C. H. Sweetapple, V. S.; and S. Sisson, V. S.; while the equipment is of the highest order.

GOSSIP.

A herd of Jerseys belonging to Mr. W. E. Burgett, Stoke Lodge, Stoke Bishop, England, was put up at auction Sept. 25th. The number disposed of was twenty-six, and sold for £58 6s. 6d., an average of £12s. 6d. Thirty-seven guineas was the top price, and was paid by J. Blackburn, for Hurdy Gurdy in calf. Alex. Hume & Co., Burnbrae, Ont., write:—“In Nov. 2nd issue (see advertisement) we offer our aged bull, Sir Colin. He has proved a good stock-getter, as our calves and yearlings, both male and female, show. His calves are at breeding age; so, therefore, we require fresh blood, and this is the only reason for selling. He is very quiet. His dam was first prize cow at Toronto this year. These calves were winners at leading fairs and are in good condition, fit to ship at any time. Any breeder or dairyman who has plenty of feed and in need of a bull will find it to his advantage to write. We can recommend our pigs to be choice.”

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Special New Premiums Special

AS our readers will remember, our first announcement of BOOK PREMIUMS stated that the supply was limited, and it being now exhausted, we substitute therefor an exquisite volume of Pressed Flowers from the Holy Land (see below and page 460 for description), and a magnificent Bagster's Teacher's Bible, which is fully described on page 463.

Pressed Flowers

FROM THE Holy Land.

AN EXQUISITE PREMIUM FOR HOLIDAY TIME.

SUITABLE FOR A Birthday,
Christmas,
or New Year's Gift.

HIGHLY INTERESTING TO SUNDAY-SCHOOL WORKERS AND LOVERS OF FLOWERS.

Contains a collection of beautiful flowers, gathered and pressed in Palestine, by Rev. Harvey B. Greene, together with description of each and Scripture references. Mr. Greene has frequently visited Palestine, and gathered and assorted with his own hands these specimens, which he offers to the Christian world.

The acting U. S. Consul at Jerusalem, Palestine, Mr. Herbert Clark, writes Mr. Greene under date of April 20th, 1896:

"Dear Friend,—I am sorry I shall not have the pleasure of seeing you again before you leave for home, laden with those thousands of beautiful flowers you have culled and preserved during the last three months.

"Yours sincerely,
"HERBERT CLARK."

The flowers are beautifully preserved with all their natural tints, and are attached to extra finished heavy chromo paper, specially

made for the purpose, with description on the page opposite to each specimen.

It is neatly bound in antique finish cover; title, "Pressed Flowers from the Holy Land," embossed in gold on front page.

HOW TO GET IT.

By special arrangement we have secured a supply of these volumes, and are able to offer a copy to any subscriber sending us the name of one new yearly paid-up subscriber.

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NEW BOOK PREMIUM.

How to build, fill, and feed from a Silo. Most complete work yet issued.

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SHEEP -- BREEDS AND MANAGEMENT.

By John Wrightson, M. R. A. C., F. C. S. Most complete and up-to-date work on Sheep-rearing. Twenty-three full-page illustrations.

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"CANADA'S GLORY"

OUR NEW PREMIUM PICTURE!

A beautiful engraving representing eleven of the grandest light horses in Canada. Should adorn the drawingroom of every lover of the horse. Is a life-like and popular work of art, unequalled in live stock portraiture.

HOW "CANADA'S GLORY" MAY BE OBTAINED.

Any subscriber sending us one new subscription to the FARMER'S ADVOCATE, accompanied by \$1, will receive a copy. Price, 50c. Copies of

"CANADA'S PRIDE"

OR "CANADA'S COLUMBIAN VICTORS"

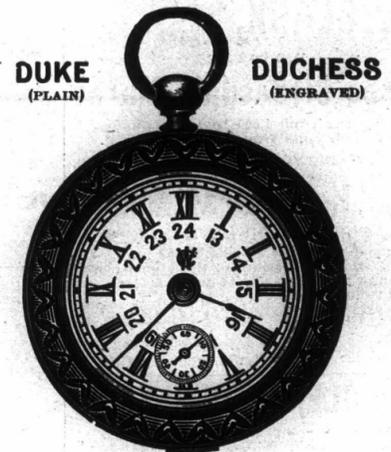
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HOW TO GET A

FIRST-CLASS COLLIE.



To any subscriber sending us the names of 10 new yearly paid-up subscribers we offer a young Collie, six weeks old or over, eligible to registration, and bred by Mr. R. McEwen, Byron, Ont.



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DUCHESS (ENGRAVED)

A thoroughly reliable 18 size watch with a Genuine American lever movement. Runs over 30 hours. Total weight, only 4 1/2 ounces. They are perfect time-keepers.

These watches have taken well and given good satisfaction for years.

This watch, with chain and charm, will be given to any subscriber sending us the names of three new yearly paid-up subscribers.

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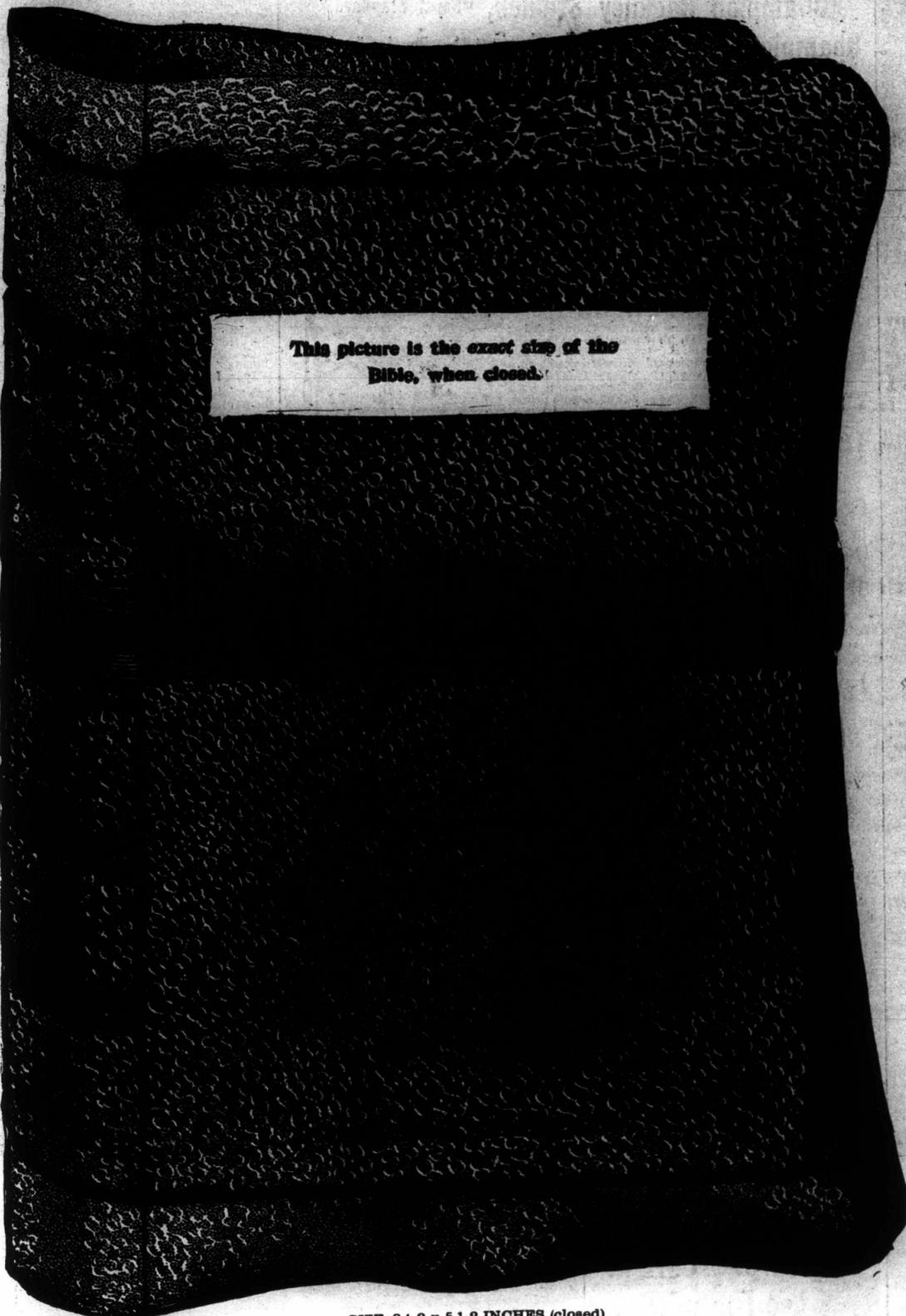
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How to Obtain this Handsome and Valuable Bible (WHICH ORDINARILY WOULD RETAIL AT FROM \$4 TO \$5):

WE WILL SEND (CAREFULLY PACKED, POST PREPAID) A COPY OF THIS BIBLE TO ANY ONE SENDING US THE NAMES AND REMITTANCE OF THREE NEW YEARLY SUBSCRIBERS TO THE "FARMER'S ADVOCATE."

SEND SAMPLE COPIES OF "FARMER'S ADVOCATE"
SENT FREE TO INTENDING CANVASSERS.

THE WM. WELD CO. (Ltd.), London, Ontario.

GOSSIP.

In writing to advertisers, please mention the Farmer's Advocate.
On the 24th of September a sale of 77 Herefords and 230 Shropshires, the property of Mr. Evan Hughes, Bedstone, Eng., took place. The rams brought an average of £4 10s. The top price for a Hereford was 41 guineas, while the average was about 15 guineas.

Mr. Henry Arkell, Arkell, Ont., in writing us to change his advertisement, refers to his recent sale as being highly satisfactory, there being between three hundred and four hundred persons present. The Shorthorn bulls and heifers sold well, as did also the Oxford ewes and ewe lambs.

Wm. Grainger & Son, Lonsdale, Ont., writes: "The young bulls we offer this season we consider the best lot we ever raised; they are good, thrifty fellows and in nice condition. Two of them are grandsons of the old Chicago cow, 2nd Fair Maid of Hullett, -9047-. Our two-year-old heifers, yearlings and heifer calves are also a grand lot. Intending purchasers would find it to their advantage to visit our herd before purchasing elsewhere."

The annual meeting of the American Shorthorn Breeders' Association will be held at the Auditorium Hotel, Chicago, Ill., Wednesday, November 13, 1896, at 7:30 p. m., for the purpose of electing three directors, and to attend to such other business as may properly be brought before the meeting. The directors whose term of office expires are A. H. Jones, John McHugh, and Abram Renick. J. H. Pickrell, Secretary.

A herd of Devon cattle belonging to Mr. Nathaniel Cook, of Cheviot, were brought under the hammer on Sept. 29th, and brought satisfactory figures. Forty-seven animals were submitted, cows, heifers, and calves. The total amount realized was \$967 11s. 6d., or an average of £20 12s. each. The highest price paid was 40 guineas for Rosebud, a nine-year-old cow that sold in 1891 for 200 guineas. Her purchaser was Mr. Rich. of Truro. Thirty-two guineas was the next highest price, paid for Belinda, by F. Ward, of Tavistock.

For the past few weeks sales of pure-bred live stock have been extant in the motherland. On Sept. 25th Mr. H. J. Sheldon, of Brails, Shipton-on-Stour, put up and sold at auction forty-four cows and heifers, realising £1,167 1s. 6d. The best prices realized were for three Duchesses of Barrington, Nos. 28th, 33rd, and 42nd. The first named was purchased by Hon. W. F. D. Smith, of Hendley-on-Thames, at 87 guineas. The next mentioned sold to Mr. Victor Cavendish for 100 guineas, and the last to the same gentleman for 50 guineas. The bulls sold for moderate figures. Mr. Basil Hanbury, of Kinton, secured Crocus 9th for 100 guineas, which was considerably the highest price paid for a male.

Hon. Mr. Dryden, "Maple Shade," Brooklyn, Ont., writes as follows: "Have sold all my yearling rams and several ram lambs at satisfactory prices. I still have eight or ten ram lambs of first-class quality, at easy prices. My bulls have done exceedingly well. They are all reds, and are old enough for immediate use. Any of your readers who may want good value at the lowest living price will find it at Maple Shade. The young bull sold to J. I. Davidson has made for himself a splendid record at the leading exhibitions this year. He is sired by Earl of March, one of the last sons of old Barmpton Hero. Earl of March is proving himself an excellent sire. Several of the bulls offered are by him, and others by Conqueror."

The 28th annual East Peterborough Exhibition was a grand success, having nearly 2,500 entries and \$729 gate receipts. The exhibit of 150 head of cattle included Shorthorns, Ayrshires, Jerseys, Holsteins, and grades—a choice lot; 170 head of sheep, and 300 pigs were exhibited. Horses were numerous and of the quality good. The principal exhibitors were: Robert Reesor, Markham, P. O.; R. Honey, Brickley; J. B. Ewing, Dartford; Stewart & Son, Menie; Tyrrel, Trenton; Bate & Son, Brighton; F. Birdsall & Son, Birdsall; Holdsworth & Son, Port Hope; D. Gibson, Bowmanville; C. Curtis, Warkworth. This show is purely an agricultural exhibition, having neither skirt-dances or acrobatic performances, which seem to be the drawing card at some exhibitions. The genial secretary, Mr. Roxburg, and the president and manager, Mr. Birdsall, and their Board of Directors, may well be proud of the success which crowned their efforts.—[Com.]

W. C. Edwards & Co., "Pine Grove Stock Farm," Rockland, Ont. (per Jos. W. Barnett, manager), write: "Our sales so far this season have been very encouraging, as are the enquiries. We are offering the best lot of bull calves this year ever bred at Pine Grove; among them some of the calves exhibited at Toronto. Banker, the winner there, is growing nicely, and promises good things to come. We are going to keep him in the herd, but have others that will push him hard. We have just sold to George Pawcett, Upper Sackville, N. B., the yearling bull, Doctor Hamilton, and the bull calf, Bill Douglas; to James C. Clark, North Wiltshire, P. E. I., the bull calf, Bold Boy; to C. A. Archibald, Bellevue Stock Farm, Truro, N. S., the bull calf, Marmion; to Stephen Weldon, Middle Coverdale, N. B., the bull calf, New Year's Boy; also to the Restigouche Agricultural Society, N. B., five shearing rams. We have a few good shearing rams still on hand that will sell at prices to suit the times."

A noted Irish Shorthorn herd belonging to Lord Caledon was dispersed on Oct. 7th. The herd has recently been brought into enviable notoriety by unprecedented showing successes. At the Royal Dublin Society last spring the total value of the winnings of this herd amounted to £119 10s. The highest price paid was 68 guineas for a yearling red-roan bull, Fassfern 68623, by Sign of Riches 66324, while 40 guineas each was paid for a few females. The summary of prices paid is—

	Average.	Total.
	c s. d.	c s. d.
50 cows and heifers	20 16 0	1,040 0 6
14 bulls	26 19 3	377 9 6
61		£1,417 10 0

Auction Sale Pure-bred Ayrshires, Holsteins and Jerseys.

AYRSHIRES.—Males—1 two years old. 1 calf six months old. Females—3 cows and 1 heifer calf.
HOLSTEINS.—Males—1 three years old. 2 bull calves. Females—9 cows and heifers.
JERSEYS.—1 bull four years old. 1 bull calf. ALL REGISTERED OR ELIGIBLE FOR.

On Thursday, November 5th, 1896.

SALE TO COMMENCE AT 1 P.M.

TERMS.—11 months' credit on approved joint notes. 8% per annum off for cash on all sums of \$10.00 and over.

M. C. R. Station (Springfield), 3 miles distant. ALEX. WOOLLEY,
G. T. R. Station (Corinth), 7 miles distant. SPRINGFIELD, ONT.
C. P. R. Station (Putnam), 9 miles distant.

**Champion Hackney Stallion, "Royal Standard."
Champion Clydesdale Stallion, "The Royal Standard."**



We have a number of first-class mares and fillies, of both breeds, in foal to the above stallions. We also have for sale a number of other choice Clydesdale stallions, Standard-bred and Thoroughbreds.

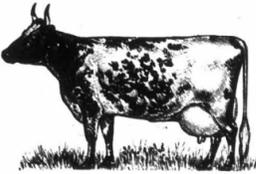
GRAHAM BROS.

Claremont, Ontario.

25 miles east of Toronto, on C. P. R. 4-11-om

Alex. Hume & Co., Importers and Breeders.

Cheap! Cheap!!
Our aged Ayrshire bull, Sir Colin -1381-; dam Sprightly III., first prize cow at Toronto in 1896. Our stock of prize-winning bull calves: Will take any reasonable price if taken before going into winter quarters. Scarcity of feed and stabling. Also stock of different ages of both sexes. Yorkshire Pigs of any desired age at bottom prices. Phone and Station—Hoard's, G.T.R. Burnbrae P.O., Ont.



ISALEIGH GRANGE STOCK FARM, DANVILLE, QUEBEC.

A CHOICE assortment of the following pure-bred stock always on hand: Ayrshire and Guernsey Cattle of the choicest breeding and most fashionable type and color. High-class Improved Large Yorkshires of all ages. "Sandors Spencer stock." Shropshires of the finest quality. Our breeding stock has been selected, at great cost, from the choicest herds and flocks of both England and Canada, and have been very successful winners in all leading show rings. Young stock supplied, either individually or in car lots, at the lowest prices. Prompt attention given to all correspondence.

J. N. GREENSHIELDS, Proprietor. 9-y-om
T. D. M'CALLUM, Manager, Danville, Que.

For Sale Cheap, That grand Ayrshire "HEATHER JOCK" -1212-

Bred by D. Morton & Son, Hamilton; sire Royal Chief (Imp.) -75- (1647); dam Primrose (Imp.) -1205- (6507). This bull has proven a sure stock getter and can be purchased at a bargain if taken at once. Having a number of his progeny at breeding age, we cannot use him. Speak quick if you want a bargain. We have also some choice young Yorkshire Sows of breeding age from the stock of J. E. Brethour. Correspondence a pleasure.

A. & H. FOREMAN, Collingwood, Ont.

There is No Doubt About the MERIT of THE KEYSTONE DEHORNER
It cuts both ways, does not crush. One clip and the horns are off close. Write for circular. The Keystone Dehorner Mfg. Co., Picton, Ont., Can.



JERSEYS FOR SALE—Young Cows and Heifers in calf. Heifer Calves and Bull Calves, richly bred, best testing strains, and good color. Also first-class Berkshire Boars and Sows, bred straight from imported stock. Come and see or write for prices.

J. C. SNELL, - Snelgrove P.O., Ont. R. R. Station, Brampton, G. T. R., and C. P. R. 8-y-om

A. J. C. C. H. R. Lee Farm Jerseys

For sale: Several young bulls fit for service—prize winners; young cows soon due to calves, heifers in calf, and calves. This is all first-class stock. Must reduce before winter.

E. PHELPS BALL, Lee Farm, Rock Island, P. Q. 17-y-o

ADVERTISE IN THE ADVOCATE.

Madison Square Live Stock Show.

As our readers will remember, the National (U.S.) Live Stock Show was inaugurated last November at Madison Square Garden, New York, and proved remarkably successful. Many wealthy Eastern men interested themselves in it, and have done so again. The amount necessary being guaranteed, it has been decided to hold another show this season, beginning on November 23rd and continuing till the 28th. The prize list amounts to \$10,000, besides many valuable specials, according to the advertisement in another column. As the entries close on Saturday, the 7th inst., Canadian exhibitors, who will no doubt show in good numbers, as they did last year, if they have not already done so, will require to lose no time in making their entries. We notice by the catalogue that a fee of \$10 is charged and must accompany each entry of ponies and cattle, except fat cattle, which are free; \$5 for each entry of sheep; and \$1 for each entry in the dairy department. Animals will be received at the Madison Square Garden at and after 6 a. m. Saturday, November 21st, and not later than 9 a. m. Monday, the 23rd inst. Owing to the lack of sufficient space, swine have been eliminated from the list. Besides a number of Canadian judges, there will doubtless be a strong representation of visitors from this side of the line, who are anxious regarding the welfare of pure-bred stock interests. All particulars regarding this important show are contained in the premium list, which will be promptly sent on application to Mr. Frank Sanger, Manager of Madison Square Garden, N. Y. The time of the show includes Thanksgiving Day, and, being superbly managed, will undoubtedly be a great success. The list of judges is as follows:—Ponies—Mortimer Levering, La Fayette, Indiana. Shorthorns—Robt. Miller, Brougham, Ontario, Canada. Aberdeen-Angus—A. S. Alexander, F. H. A. S. M. D., C. V. S., Evanston, Ill. Herefords—E. S. Shochney, Chicago. Jerseys—Mortimer Levering, La Fayette, Indiana. Guernseys—James Forsyth, Oswego, N. Y. Ayrshires—Geo. K. Taber, East Aurora, N. Y. Holstein-Friesians—S. Burchard, Hamilton, N. Y. Shropshires—George Allen, Allerton, Ill. Southdowns, Hampshires, Cotswolds, and Dorsets—George Aitkens, Woodstock, Vermont. Fat Cattle—Richard Gibson, Delaware, Ontario, Canada. Fat Sheep—David McKay, Fort Wayne, Indiana.

Special prizes.—Besides the prizes offered in the published list already circulated, a number of specials have been arranged for. The American Hereford Cattle Breeders' Association offer \$105, to be divided in three prizes in each of three sections, viz., for steer or heifer calf, yearling, and two-year-old. The American Guernsey Cattle Club offer \$75, \$50 and \$25 for breeder's herd, as well as \$75 and \$50 for the two cows averaging the greatest amount of butter-fat for two consecutive days. The American Shropshire Registry Association offer a \$50 prize for the prize stakes registered Shropshire wether, as well as seven lots of \$15 each, seven lots of \$10 each, and three lots of \$5 each, for pure-bred and grade Shropshires. Ten dollars and \$5, and \$15 and \$10 are offered for sheep or goats in single and double harness. Fifteen dollars and \$10 are also offered as special prizes for best five wether lambs, sired by registered ram any breed.

U. S. Farmers' Institute Workers.

A year ago, what was called an "International Farmers' Institute Association" was organized in Wisconsin, composed mainly of leading workers from several of the Western States. The second meeting was held in Chicago, on Oct. 14th and 15th, with representatives from ten States present. The name of the organization was changed to that of "The American Association of Farmers' Institute Workers." An active membership by States was made on payment of \$10, to be held by the head of the Institute work or superintendent in each State. This change was opposed by Superintendents Dawley, of New York, and McKerrow, of Wisconsin, who wished to retain the popular feature of individual membership and to maintain the Association as originally organized. Officers elected for the ensuing year: President, George McKerrow, of Wisconsin; first Vice-President, I. H. Butterfield, Michigan; Secretary-Treasurer, F. W. Taylor, of Lincoln, Neb. Additional members of Executive Committee—John Hamilton, Pennsylvania; W. W. Miller, of Ohio; W. C. Latta, Indiana. On invitation of Secretary Miller, of the Ohio Board of Agriculture, the Association decided to hold its next meeting in Columbus, O., in October, 1897. A strong resolution was adopted by the Association commending such fairs as have driven all questionable features from their grounds and requesting such as have not yet done so to cleanse their exhibitions in the future. Several interesting papers on Institute work were read.

New York Horse Show Entries.

Notwithstanding the fact that considerable more money is being offered in prizes this year than last, the entries, which closed on the 17th inst., for the Horse Show at New York, Nov. 9th to 14th, number some 200 less. One of the principal reasons for this is attributed to the fact that previous 1st prize winners can compete only in championship contests, and to the further fact that there are not so many special classes opened by contributors of prizes. The falling off of some 30 entries in trotters, and about 35 in Hackneys, shows where a portion of the decrease comes in. Tandem, Saddle, and Hunter classes are to be much the same as those last year in point of numbers. The aggregate number of 1896 entries is about 1,100, among which are quite a number from Canadian stables.

HOLSTEIN-FRIESIANS FOR SALE—A few good young Bulls and Heifers of choicest breeding, being from imp. Cows from the famous herd of B. B. Lord & Son, N. Y., or directly descended therefrom. Address

JNO. TREMAIN, 3-1-yo Forest, Ont.

LAST CHANCE

To obtain a young JERSEY BULL from the famous Belvedere herd. As my whole herd now goes to Prince Edward Island, I have reserved for my customers

Six Splendid Young Bulls

Four months to eighteen months old. Sure prize-winners. Reasonable prices to immediate buyers. These are the best I have ever offered.

MRS. E. M. JONES, Box 324, BROCKVILLE, Ont., CAN.

W. F. BACON, - Orillia, Ontario.

-BREEDER OF- CHOICE REGISTERED JERSEYS

Young bulls and heifers of the best blood for sale. Write me for prices and particulars. 19-1-y-o

GLEN ROUGE JERSEYS.

WILLIAM ROLPH, Markham, Ont., offers twelve Jersey Bulls and Heifers (pure St. Lamberts), out of tested cows. Grand individuals. Prices right. 22-y-om

"Gem Holstein Herd."
SNAP! \$75.00 CASH
 Sir Archibald Mascot, No. 353, C. H. F. H. B., 4 years old 8th of October, 1895; was never sick a day; is very active, and a splendid stock getter, and is in every respect a first quality bull. We have used him as our stock bull with the very best results. Only part with him to change breeding. He was a prize winner three years in succession at Toronto Industrial Exhibition.

ELLIS BROTHERS,
 BEDFORD PARK P.O., ONT.
 Shipping Station, Toronto. 7-y-om

HOLSTEINS!
 We now offer young stock that have won prizes, and calves from our show herd, from one month to one year old, whose dams have large records—any age or sex—FOR SALE, at very low prices to quick buyers. Also some Poland-China Pigs, 1 and 6 months old; same quality (the best).

G. & C. RICE,
 Brookbank Stock Farms, CURRIE'S CROSSING, Oxford Co., Ont. 18-y-om

MAPLE HILL HOLSTEIN-FRIESIANS.
 FOR SALE—Yearling Bull, Sir Aaggie Barrington; fine dairy form, good color, and in good condition. His grandam, imp. Kaatje DeBoer, is now making, in my herd, from 2 1/2 to 3 lbs. of butter per day, at 12 years old. The bull resembles her very much in form and markings. Price, \$40.00.

11-y-om G. W. CLEMONS, St. George, Ont.

HOLSTEINS
 None but the best are kept at **BROCKHOLME FARM, ANCASTER, ONT.** Write me for prices if you want first-class stock at moderate figures. Holsteins in the advanced registry. Yorkshires all recorded.

12-y-om R. S. STEVENSON, Prop.

Springbrook Stock Farm.—HOLSTEIN-CATTLE and TAMWORTH SWINE. Four extra choice, rich-bred bulls ready for service. Write at once for bargains. Other stock for sale of best quality. A heavy stock of Tamworths on hand, bred from imported stock.

7-1-y-om
 A. C. HALLMAN, New Dundee, Ont.

Dominion Prize Ayrshires
 Herd of . We have the oldest established, largest and best herd of Ayrshires in Canada. Choice young stock for sale at liberal prices. Satisfaction guaranteed.

JAMES DRUMMOND & SONS,
 1-1-y-0 PETITE COTE, MONTREAL, P. Q.

OAK POINT STOCK FARM
Ayrshires FOR SALE.
 I have now for sale a choice lot of young bulls and heifers of fine quality, and bred from best milking strains. Particulars on application.

J. B. CARRUTHERS,
 Kingston, Ont. 17-y-0

Ayrshires!
 PURE-BRED, of different ages, and both sex. No inferior animals. Write for particulars.

A. McCallum & Son,
 Spruce Hill Dairy Farm, DANVILLE, QUE. 22-y-0

Maple Cliff Stock Dairy Farm
 Ayrshire Cattle, Berkshire and Tamworth Swine.
 FOR SALE.—Four Ayrshire bulls of different ages, sons of such noted animals as Nellie Osborne 3358, and Gold King 1832. They are good ones. Write for prices.

R. REID & CO., Hintonburg, Ont. 19-1-y-om One mile from Ottawa.

WM. WYLIE, 228 Bleury St., MONTREAL, or Howick, P. Q.
 Breeder of high-class AYRSHIRES. Youngstock always for sale; bred from the choicest strains procurable. Breeding stock selected from the most fashionable strains and prize-winning stock of the day. Farm located at Howick, Que. 5-1-y-0

AYRSHIRE BULL CALVES
 for sale cheap, if taken immediately. Three dropped in August, sired by Imp. Glencairn; dams by Silver King.

D. DRUMMOND,
 BURNSIDE FARM, 16-1-y-om PETITE COTE.

WM. STEWART & SON,
 MENIE, ONT.,
 Breeders of high-class Ayrshire cattle; choice young stock of either sex and any age always on hand. Our herd contains a number of Columbian winners. 21-1-y-0

AYRSHIRE CATTLE
 The bull TOM BROWN and the heifer WHITE FLOSS, winners of sweepstakes at World's Fair, were bred from this herd. Young stock for sale. Also Leicester Sheep and Berkshire Swine.

5-1-y-0
DAVID BENNING,
 Glenhurst Farm, WILLIAMSTOWN, ONT.

J. YULL & SONS,
 MEADOWSIDE FARM, CARLETON PLACE, ONT.
 Choice Ayrshires of deepest milking strain. Largest and oldest herd in Canada; headed by Leonard Meadowside, winner of 1st prize at Chicago, Ottawa, and Gananoque. Fine Shropshire Sheep, and a choice lot of young Berkshire Pigs for sale. Visitors met at Queen's Hotel, Carleton Place. Give us a call before buying elsewhere.

20-y-0

Ingleside Herefords.
 UP-TO-DATE HERD OF CANADA!

Bull Calves
 OF THE RIGHT SORT For Sale.
 Address—
H. D. Smith,
 INGLESIDE FARM,
 Compton, Que. 17-y-om

GUERNSEYS
 This is the Dairy breed for ordinary farmers. Large, vigorous and hardy, giving plenty of rich milk. Several fine young bulls for sale at very reasonable prices. A few heifers can be spared.

Address: SYDNEY FISHER,
 Alva Farm, Knowlton, P. Q. 17-y-0

C. & E. WOOD,
 Freeman, Ont.,
 Breeders of high-class **LEICESTER SHEEP**
 Choice ewes and rams and ewe lambs for sale at very low prices, considering quality. Write us for prices and particulars.

18-y-0

ONLY A FEW SHROPS
 RAM and SHEARLING RAMS. FOR SALE
A Shetland Pony,
 Four years old.
Collie Pups—
 Handsome sables.

RICHARD GIBSON,
 DELAWARE, ONT.

HILL HOME SHROPSHIRE
 We have for sale shearing rams of exceptional merit; ram and ewe lambs of choicest quality and covering, sired by Tinker, a winner at New York and London and now heading our exhibition flock of '96, and an imp. Parker ram. Can also furnish grand show pens, right. Lambs from this flock won all special offers at Toronto, London, New York, Guelf, and ten county fairs in 1895. Parties wishing stock of extra quality should visit this flock before purchasing elsewhere.

14-1-y-0 D. C. HANMER & SONS, Mt. Vernon, Ont.

SHROPSHIRE RAMS.
 I have a number of registered Ram and Ewe Lambs of first-class quality and breeding for sale; also a few Berkshire Boars, which I will dispose of cheap.

13-1-y-om W. R. BOWMAN, Mt. Forest.

130 first-class registered yearling **Oxford Down Rams** for sale. Also 80 good RAM LAMBS, at ranchmen's prices.

9-y-om **HENRY ARKELL,** Arkell, Ont.

F. BIRDSALL & SON,
 BIRDSALL P. O., ONTARIO.
 We have a few Registered Oxford Down Ram Lambs left which we will sell at a low figure.

11-1-y-0

SHEEP BREEDERS' ASSOCIATIONS.
 American Shropshire Registry Association, the largest live stock organization in the world. Hon. John Dryden, President, Toronto, Canada. Address correspondence to MORTIMER LEV-ERING, Sec., Lafayette, Indiana. 3-1-y-om

ON TIME
 to first applicant in each locality, a pair of the FAMOUS **O. I. C. hogs.**
 Two weighed Sold \$1129
2806 lbs. for breeders first 1/2 this year.
 DESCRIPTION FREE.
L. B. SILVER CO., Cleveland, O.

To Stockmen & Breeders.
LITTLE'S PATENT FLUID NON-POISONOUS SHEEP DIP AND CATTLE WASH.

For the destruction of Ticks, Lice, Mange and all insects upon Sheep, Horses, Cattle, Pigs, Dogs, etc. Superior to Carbolic Acid for Ulcers, Wounds, Sores, etc.
 Removes Scour, Roughness and Irritation of the Skin, making the coat soft, glossy and healthy.

The following letter from the Hon. John Dryden, Minister of Agriculture, should be read and carefully noted by all persons interested in Live Stock.

"MAPLE SHADE" HERDS AND FLOCKS.
 BROOKLIN, ONT., Sept. 4th, 1896.
 DEAR SIR,—I cannot afford to be without your "Little's Sheep Dip and Cattle Wash." It is not merely useful for Sheep, but it is invaluable as a wash for Cattle, etc. It has proved the surest destroyer of lice, with which so many of our steers are infested. I have ever tried; it is also an effectual remedy for foul in the feet of Cattle. I can heartily recommend it to all farmers and breeders.

JOHN DRYDEN.
 Seventeen Gold, Silver and other Prize Medals have been awarded to "Little's Patent Fluid Dip" in all parts of the world. Sold in large tins at \$1.00. Special terms to Breeders, Ranchmen and others requiring large quantities. Ask your nearest druggist to obtain it for you; or write for it, with pamphlets, etc., to **ROBERT WIGHTMAN, DRUGGIST, OWEN SOUND, ONT.**
 Sole Agent for the Dominion. 7-1-y-om

LEICESTERS at MAPLE LODGE STOCK FARM.
 A very choice lot of rams and ewes for sale now. We breed the best. **JAS. S. SMITH,**
 9-1-y-om Maple Lodge P. O., Ontario.

A Specialty of **Improved Yorkshire Swine**
 A grand opportunity to purchase first-class stock to produce bacon hogs which bring the highest price in the market. Stock of different ages at moderate prices. Examine this herd at the exhibitions. **J. E. BRETHOUR,**
 3-y-om Burford, Ont.

Golden Link Berkshires
 HERD OF
 Was the sweepstake herd at London, '95 and '96. The famous yearling, Frita Lee, heads the herd, assisted by Golden Flag and High Clero's Crown. Young stock of both sexes, all ages, for sale at reasonable prices; also S. L. Wyandottes, Black Minorcas, Light Brahmas, and Plymouth Rocks for sale.

T. A. COX, "Sunnyside Stock Farm," BRANTFORD, ONT. 21-1-y-0

LARGE ENGLISH BERKSHIRES.
 My herd won 246 prizes, 10 diplomas, 5 medals; also Prince of Wales prize, and sweepstakes over all breeds since 1838 at the leading fairs in the Dominion. Choice stock of all ages for sale. Pairs supplied not akin. **GEO. GREEN,**
 Stratford Station and Telegraph Office.

Siprell & Carroll, CARHOLME P. O., ONT.,
 BREEDERS OF—
BERKSHIRE SWINE
 Quality of the Best.
 Our leading sows are Carholme Queen, Carholme Lass, and Lady Lightfoot. Choice young stock for sale. Correspondence solicited.

11-1-y-0

LARGE ENGLISH BERKSHIRES FOR SALE.
 Descended from imp. stock of the up-to-date type. Young pigs of all ages and either sex for sale, at prices in keeping with the times.

GEO. PADGET,
 Unionville St., G. T. R. BUTTONTVILLE, ONT. 9-1-y-0

GOSSIP.
 In writing to advertisers please mention the Farmer's Advocate.

French official returns show that foot and mouth disease, and pleuro-pneumonia, have been prevalent in several departments during the past summer.

It is reported that after a six months' trial the city authorities of Buda-Pesth have forbidden the use of motor vehicles within the confines of the city, on account of the accidents which have happened during the brief period of their existence.

The English Southdown Sheep Breeders' Association have authorized their delegates to the Council of the National Sheep Breeders' Association to propose the following motion: "That it is desirable that the representatives of each breed of sheep should agree upon a maximum length of wool that should be allowed on show sheep of that particular breed."

Mr. G. W. Forest, Superintendent of Nappan (N. S.) Experimental Farm, reports the crops on the farm very good this year. Plots of oats yielded at the rate of 100 bushels per acre, while wheat went 57 and barley some 60 bushels per acre. Small fruits and apples gave a very heavy yield of fine quality. Hay was not above an average crop.

The British Royal Commission on the Condition of Agriculture has resumed its sessions, and will hold two sittings in each week until the final report of the proceedings has been completed. It is hoped by this means to finish the sittings of the Commission by December, and have the report ready to be laid before Parliament when it meets in the new year.

For the nine months ended September 30th, the value of the cattle exported from Britain was \$97,100, against \$288,675 last year; sheep and lambs, \$71,583, against \$38,507; swine, \$2,250, against \$12,548; and other animals, \$28,756, against \$25,255. The number of cattle was 3,501, against 4,908; sheep and lambs, 6,379, against 4,524; swine, 372, against 2,816; and other animals, 20,020, against 20,505.

At a meeting in Perth, Scotland, lately, it was decided to organize a Highland Flockmasters' Association, to form a bond between sheep-owners, rendering them more influential as a class in any steps that might be necessary for the protection of their interests. Mr. Grant Invergeldie, was appointed president, and Mr. Pender, Arnoe, secretary-treasurer, with a large committee.

A correspondent writing to a Berlin journal from East Friesland (North Hanover) states that foot and mouth disease continues to make great headway there, new outbreaks being reported daily, in spite of all precautions to prevent the spread of the disease. About one-fifth of the East Friesland live stock have been attacked, and, so far, there is not the slightest sign to indicate any abatement of the epidemic. The outlook for breeders is very dark.

We draw the attention of our daily readers particularly to W. O. Shearer's advertisement in this issue of Jersey heifer calves. It takes some time and experience to raise a herd of cows that will produce, as Mr. Shearer reports, an average of 330 pounds of butter each in a year! This is an excellent opportunity for dairymen to purchase stock from such cows for the nucleus of a herd; 330 pounds of butter each per year, at an average price of 30c, per pound, comes to \$99 per cow, besides the calf, and season, milk of the whole season.

The English Live Stock Journal refers to the purchase by Mr. Poole, V. S., of Peterborough Co., Ont., of a rich bay six-year-old carriage stallion, Warley Toff, bred by the late Mr. Eastland, Childerditoh Hall, Essex; sire De-light, bred by Mr. Pearson, Great Melton, Norfolk; dam by a Thoroughbred (own brother to Gladysaur). Also a brace of pedigree Dutchhounds; the dog Polioona is a dark one, bred by Police Constable; bred by Mr. Connall, Milntown, Langholm, Scotland.

The report of two recent sales of Shorthorn cattle bred in the Argentine Republic show that trade is reviving there in an unmistakable way, and there is every prospect of its continuance in the upward path. The first sale on the 7th August was of cattle of pure Booth blood. Curllan III, a bull calved 7th September, 1893, drew \$235; another of the same age drew \$214, and a third, calved in October of the same year, made \$357. A December calf of 1893 made \$285, and a January calf of 1894 made \$278. A March calf of the same year made \$128, and then we find a July calf—that is, a yearling bull—selling for \$214, an April calf for \$235, and a September calf for \$157. The \$235 yearling was got by Sir Lucius Rilly, and the others were by the two bulls, Knight of Dereham (57545) and an Argentine-bred bull, Udalmu.

The other sale was held on 20th August. The first bull, a two-year-old of the Cruickshank Buttery tribe, sold for \$228; and other two-year-olds made \$128, \$214, \$400, \$428, \$300, and \$214. One was unsold. The average for the seven sold was \$316. The seven sold were of Aberdeenshire blood, the others' ancestors were bred abroad for several generations.

A CATTLE PLAGUE IN JAMAICA.
 Cattle disease of an epidemic character has been raging in the Island of Jamaica. Hundreds of the working stock of the Island have succumbed, and the mysterious character of the disease has hitherto baffled the local veterinarians. Some time ago a special meeting of the Legislative Council was called to take measures to cope with the plague, and a vote of \$500 was passed for the services of an expert. Prof. Williams, of Edinburgh, the well-known veterinary expert, was called for, and arrived in the Island on August 2nd. He proposes to remain in the Island for three months, visiting the various estates where the disease is rampant, and watching its varied stages. The disease is mysterious in its character, and has not yet been classified. The worm *Strongylus mirans* has been found in the lungs and intestines of the slaughtered animals, but that the disease is due to this has not yet been definitely ascertained. The price of meat in the Island has risen to an almost prohibitive rate, due to the cattle plague and to the decline in the importation of Columbian cattle, caused by a heavy protective tax recently imposed.

ADVERTISE IN THE ADVOCATE

The O. A. C. Annual Sale.

The annual sale of surplus stock at the Ontario Agricultural College, on October 14th, was favored by fine weather, and consequently there was a good attendance.

Cattle.—Shorthorn heifer calf, College Lady, calved April 12th, 1896; sire Scottish Prince II, dam Laudress—W. Brown, Fordwich, \$21.

Sheep.—Shropshires—Aged ewe, C. Davidson, Acton, \$10. One two-shear ewe, E. Goetz, Weisenburg, \$5.75.

Hogs.—Berkshires—One boar and one sow, farrowed November 4th, 1895; sire Barton Tom, dam Lass of Riverside—boar, J. Kitching, Corwin, \$9; sow, O. Heffernan, Marden, \$14.

(Continued on page 467.)

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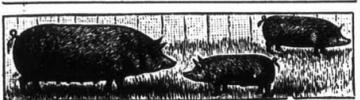
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P. R. Hoover & Sons, GREEN RIVER, ONT., BREEDERS OF CHOICE TAMWORTHS.

We are now offering a few good young sows, ready to breed, at prices which should sell them. St. Louis Hill, C.P.R.; Markham, G. T. R. Correspondence solicited. 9-1-y-om



BARTON HERD OF TAMWORTHS. Choice stock of all ages and either sex, descended from imp. stock. Pairs and trios not akin. Write for prices. 19-1-y-om W. T. ELLIOTT, Hamilton Market.



CHRIS. FANNER, CREDITON, ONT., Importer and breeder of Large Eng. Berkshires, Poland-Chinas, Tamworths, and Duroc-Jersey Swine. Choice young stock for sale. Prices to suit the times. 11-1-y-om

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Our herd made a clean sweep of all the first prizes (30) at the late Toronto, Montreal and Ottawa Exhibitions. DARKNESS QUALITY, the unbeaten winner at the World's Fair, heads the herd. Stock for sale. Write for prices.

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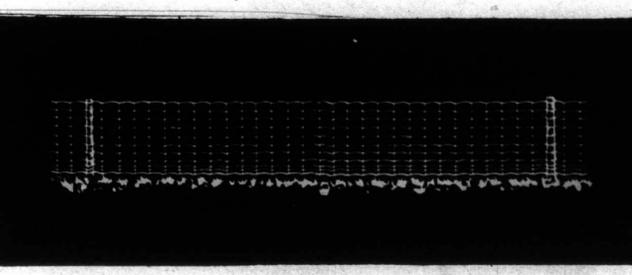
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plenty of oats is not enough. A horse
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O. A. C. ANNUAL SALE (Continued).
Cows, J. Mason, \$5.50, \$5 and \$5.50; H. Eveleigh, Moffat, \$6. Maple Queen, farrowed October 20th, 1891; sire Buffalo Bill, dam Daisy-T. Brooks, Brantford, \$15.
Poultry.—The poultry buyers were: H. R. Patterson, Shiloh; R. F. Holtermann, Brantford; Geo. Dennis, Hamilton; J. Thompson, Elora; J. Kirkwood, Ospringe; D. Messenger, Guelph; M. Merton, Fergus; D. Stewart, Everton; J. Duff, Rockwood; R. H. Marshall, Galt; C. Larter, Galt; G. Clark, Waterloo; H. Hassen, Guelph; C. J. Daniels, Hamilton; F. Webber, Guelph; T. H. Robertson, O. A. C.; T. McCrea, Guelph; E. S. Wilson, O. A. C.; B. F. White, Guelph; T. Hower, Guelph; S. M. Clame, Galt; D. Bailey, Guelph; W. Grills, Galt; C. Livergood, Haysville; A. Stone, Guelph; J. Murdock, Palmerston; A. Marshall, Puslinch; W. Kenny, Guelph; T. Somerville, Haysville; W. Darby, Marden; T. C. Bell, O. A. C.; J. J. Senior, Hamilton; J. Hurley, Guelph; J. McNaughton, Schaw; G. Taylor, Rockwood; C. Currie, Morriston; A. W. Tyson, Guelph; E. Richardson, O. A. C.; A. Petrie, Fergus; W. J. Hood, Guelph; J. Weir, Fiamboro; H. W. Ironsides, Schaw; D. Callaway, Ennottville; T. Gully, Guelph; W. Simpson, Blair; W. D. Workman, Castledore; W. Thacker, Puslinch; T. Cockburn, Clappison; A. Farr, Guelph.

GOSSIP.
Douglas H. Grand, formerly of London, Ont., latterly of Buffalo, N. Y., has established himself in London, Eng., for the purpose of selling on that market shipments of horses sent over by D. H. Grand & Co., New York, and other consignors.
Col. W. M. Liggett, who for years has been chairman of the Agricultural Committee of the Regents of the University of Minnesota, has recently been appointed Dean of the College of Agriculture at St. Anthony Park, so that he is now actual, as well as nominal, head of that institution.
A new line of freight and cattle steamers will shortly commence running between Newport News, Va., and Rotterdam, Holland, stopping at Deptford, Eng., to land cattle. This line is part of the Thomson line, owned by Thomson & Sons, Dundee, Scotland. The first sailing, that of the Hurona, will be Nov. 28th.
Forty veterinary surgeons lately met and organized the Chicago Veterinary Association, with the following officers: President, R. G. Walker; first Vice-President, O. E. Dyson; second Vice-President, J. Henderson; third Vice-President, J. G. Fish; Secretary, L. Campbell; Treasurer, J. McEvers; Board of Censors, Joseph Hughes, L. A. Merrill, and R. Gysel. Monthly meetings will be held.

The number of sheep in New Zealand on April 30th was about 19,000,000. Last year it was 19,536,004; so there has been a decrease of over 500,000. No less than 3,929 acres were devoted to ensilage, including 2,164 acres of oats, but only 216 of maize. New Zealanders are adepts at sheep shearing, 140 head per day being a not uncommon average, while phenomenal experts have run up to 200. Shearing machines are also coming in use, by which the foregoing records can be very much exceeded.

The tenth annual meeting of the American Essex Swine Association was held at the Leland Hotel, Springfield, Ill., October 1st. The report of Secretary-Treasurer F. M. Srout showed that the business of the Association is in a prosperous condition. The Secretary was instructed to close entries for Vol. IV, on January 15th, and have the volume ready for distribution by May 1st. The following officers were elected: President, Geo. A. Hines, Celina, Ohio; Vice-President, A. C. Green, Winchester, Ind.; Secretary-Treasurer, F. M. Srout, McLean, Ill.; Directors for three years—D. E. Woodling, Beach City, O.; E. C. Gwinner, Atlanta, Neb.; Millard Storey, Dallas, Tex.

Mr. Robert Barr, Larga, has sold the well-bred big horse Gallant Hamilton (2519) for export to the United States, says the Farming World of Edinburgh. He was got by the noted sire Top Gallant (1850), out of Bickerton Hall Jess (6906), by the 1,000 gs. horse Duke of Hamilton (2074), while his grandam was the successful breeding mare Forest Mallie (4740). This horse's sire and sire of dam were exceptionally high-priced animals, and made quite a reputation for themselves at the stud. Their produce won numerous prizes, and the Glasgow premium more than once or twice. All of them were characterized by great strength and substance.

Mr. J. G. Clark, Woodroffe Dairy and Stock Farm, writes:—"In your list of awards at the Central Canada Exhibition, Ottawa, you omitted the 4th prizes in Ayrshire heifer calves under six months, and under one year, both of which came to me. Owing to the large number of entries, and all good in those sections, I consider 4th prizes worthy of mention. Then again in Improved Yorkshire pigs, the prizes won by me are credited to J. A. Cochrane, Hillhurst." The prize list published in the ADVOCATE was furnished by the exhibition officials. We draw attention to Mr. Clark's change of advertisement in this issue. Such Clyde-dailes as he offers are valuable property just now.

We call attention to the important sale of pure-bred Ayrshires, Holsteins, and Jerseys, to be held on November 5th, advertised in this issue. The stock belongs to Mr. Alex. Woolley, Springfield, Ont., who is taking this means of reducing his stock before winter arrives. The Ayrshires to be sold are two three-year-old cows, one four-year-old cow, a heifer and a bull calf, and one of the matrons of the herd. The Holsteins consist of eleven females, including three yearlings, two two-year-olds, two three-year-olds, and two of the matrons of the herd. One of these is Duchess of Wyton 25th, that has given as high as eighty pounds of milk in one day. Mr. Woolley paid \$20 for her at auction, and has never regretted doing so. Much of the young stock is descended from her. The Jerseys to be sold are two young bulls, St. Lambert King 3500, A. J. C. C., bred by Mr. Homan, of Napanee, was calved in 1892. The other Jersey is a promising calf. At the present promise of better things in dairying and plenty of fodder, this sale should receive worthy patronage. Mr. Woolley's herd made a tour of the local shows this fall, and secured a high per cent. of the best prizes competed for.

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