

**PAGES  
MISSING**

# FARMER'S ADVOCATE

AND HOME MAGAZINE

\* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.\*

Vol. XXXII.

LONDON, ONT., AND WINNIPEG, MAN., MARCH 1, 1897.

No. 425.

## EDITORIAL.

Among the encouraging signs of the times is the distinct advance in the prices being paid for beef cattle and feeders. For the latter, we note that as high as \$4.25 has within the last week been paid in Chicago, and we have been assured on good authority that as high as \$5.12½ has been contracted for export cattle at one point in Ontario for May delivery. Breeders of dairy cattle also report an increasing enquiry for cows as the spring approaches.

Our most grateful acknowledgements are tendered to the many correspondents among our subscribers who are cheerfully helping us to make the *ADVOCATE* the best and most practical paper of its class on the Continent. Our difficulty, we are pleased to say, is not to find material of suitable character to fill the paper, but to find room for the many reasonable contributions on our file. In this connection we ask our friends whose letters do not appear as soon as they would like, to exercise patience, and we will use them as soon as we can consistently with the furnishing of proper variety in all the departments.

Bee-keeping even as a side issue in farm life has, we fear, fallen somewhat into neglect in late years, partly, no doubt, from the fact that farmers feel that they have not time to devote to it. To those who have a taste for the work and take pleasure in the study there is a good deal of fascination in the subject, and by good management, we are persuaded, it may be made profitable and a source of pleasurable recreation as well. Mr. A. E. Hoshal, a successful specialist in this line, is contributing a series of articles for the *ADVOCATE* on this subject, the first of which appeared in our last issue, and his article No. 2 will be found in the apiary department in this issue. All interested should follow the series.

It is exceedingly gratifying to us that we are receiving so many encouraging words from our subscribers in regard to the character of the *ADVOCATE* as it reaches them. Our aim is to make it practical and helpful to our readers in all its departments, and to give only such advice and information as we feel confident it will be safe to follow, but just here we desire to remind our readers that the methods which are successful in some sections of so wide a constituency as ours may not be at all adapted to other districts where the climatic conditions, soil and other environments are widely different. A little exercise of that precious gift, common sense, and the use of proper judgment, must be the guide to safe action, and radical changes of methods should not generally be adopted until experiments are first made on a limited scale.

### Special Veterinary Examination.

A special examination of veterinarians for the appointment of quarantine inspectors under the new regulations was held Feb. 19th to 22nd, at London, Toronto, and Kingston. This was brought about by an arrangement between the U. S. and Canadian Governments, whereby inspectors who give certificates of examination of live stock for contagious diseases would be appointed only after passing an examination on these subjects. Prof. McEachren, of Montreal, Chief Inspector for the Dominion, and Prof. Smith, Toronto, were the examiners.

The examination was both written and oral. Fifty-two candidates wrote at London, 75 at Toronto, and 19 at Kingston.

The paper set was as follows:—

**Tuberculosis.**—Give the symptoms of Tuberculosis in cattle in its different forms and stages. Explain how it is communicated. Describe the bacillus of Koch. Give the *post-mortem* condition and where the tubercles are to be found.

What is Tuberculin? How preserved? Give the dose undiluted for calves, medium sized adult, and large adult cattle. How is concentrated tuberculin diluted for use?

Describe the manner of applying the test and the conditions necessary to obtain reliable results. What rise in temperature would indicate Tuberculosis? What reaction would you expect in an advanced stage of the disease?

**Sheep Scab.**—What is the cause of sheep scab? Name the varieties of the parasites. Describe the symptoms. How is it communicated?

Describe the course you would pursue in dealing with it when discovered in sheep on a farm, on a railroad car, steamboat or stock yard, with a view to prevent its extension to other sheep.

**Hog Cholera and Swine Plague.**—What special features characterize these diseases? What causes them? Describe the Bacillus of each. Give symptoms of each. *Post-mortem* lesions of each. How does it spread in a district? What measures would you adopt to prevent their extension?

**Glanders.**—What animals are susceptible to Glanders? In what forms does it occur?

What causes the disease? Name the bacillus and some of its properties. Give the clinical symptoms, and give the dose of Mallein and its effects on a glandered animal.

**Disinfection.**—Suppose a contagious disease to have occurred in a byre, stable, hog pen or sheep pen, how could you disinfect them to render them safe to be occupied by healthy animals? Give a formula for a disinfectant in such a case.

### Veterinary Education.

The recent special examination of veterinarians for the position of inspectors under the new quarantine regulations has revived the contention for a higher standard of preparatory education in the case of those who purpose taking the prescribed course at the Veterinary College. The necessity for taking higher ground in this regard is generally admitted and the proposal supported by the more intelligent and progressive men in the profession, and must be apparent to all who take an interest in the question.

At the time when the College was instituted the number of qualified practitioners in the country was exceedingly limited, the lack being largely supplied by the quack doctor or district "farrier," who ministered to the wants of ailing animals, prescribing wonderful combinations for the cure of all the ills that horseflesh is heir to, with all the apparent confidence and assurance of the patent medicine vendor of the present day. The need of a training school for veterinarians at that date was recognized by the Board of Agriculture for Upper Canada, who were fortunate in securing the services of Dr. Andrew Smith, who has been eminently successful in building up an institution having a continental reputation and which has been largely patronized by students not only from all the Provinces of the Dominion, but also from most of the States of the neighboring Republic.

The standard of our public schools and colleges in those days, though exceedingly creditable to so young a country, was by no means as high as at the present day. Under our excellent educational system great strides of improvement have been made, and to-day our school system is the admiration and envy of the world. At the inception of the Veterinary College it was, perhaps, pardonable, if not, indeed, commendable, that the standard of admission should be such as to admit men having a taste and love for the work, but whose educational advantages had been limited. There was a real need for the services of such men. The population was increasing. New fields for farming were being opened up and the future seemed promising for still more extended fields of usefulness. But the circumstances are changed. The supply at present in this as in most other lines of activity—agricultural, commercial, and professional—is more than equal to the demand at living rates of compensation. The question of a remedy naturally presents itself—a means of meeting the requirements of the times, of keeping abreast with the forward march of the minds of the age. In agriculture, in stock-raising, dairying, and the mechanic arts, it is conceded by all advanced thinkers that the remedy for overproduction lies in the improvement of the output, the elevation of the standard of quality, and the question resolves itself into one of

"the survival of the fittest." Why not apply the same rule of reasoning to the subject of these remarks? The standard of the entrance examinations to our high schools and of matriculation to our universities has been from time to time advanced to keep pace with the spirit of the times. Why should the requirements for admission to the Veterinary College be limited to a knowledge of the mysteries of the "three Rs," if indeed it embraces all of these?

We do not desire to indulge in uncharitable criticism, or to unnecessarily reflect upon the members of the profession, but we may say we have reason to believe, from conversation with some of the candidates, that the examiners in the recent examinations had little cause for congratulation in the papers handed in by a large proportion of those who wrote, or in the answers given in the oral examination. We cheerfully grant that there are in the ranks worthy exceptions to all that is implied in the foregoing remarks, but the law of averages applies to this as well as to all the walks of life, and the result is no matter for surprise when we reflect that with few exceptions success in any profession hinges largely on systematic study, and this in its best development depends upon a trained intellect. The professional man should be pre-eminently a student, a trained student, and his studies should not cease with the receipt of his diploma, but should continue through a life of earnest application. To our mind the veterinarian needs fully as high an education as the medical doctor, and as close and careful study of his subjects of treatment in practice, from the fact that they are dumb, and, hence, incapable of assisting him in the diagnosing of their diseases.

We submit that the time is ripe for fixing the standard of matriculation at least as high as a third-class non-professional certificate, and that the period of study should extend over at least four years in order to master the subjects embraced in the curriculum. And the granting of degrees should be vested in the Provincial University, as in the case of graduates of the Agricultural College. We shall be pleased to hear from members of the profession or others interested in this subject, and our columns are open for friendly discussion and suggestion.

### Practice, with Science.

BY RICHARD GIBSON.

I was once peculiarly struck with the (to me) very crochety idea conceived by a Shorthorn breeder in New York State. It was to mingle the blood of Bates, Booth and Knightley, in certain proportions, to make the perfect Shorthorn. His formula was one half Bates, one quarter of each of the others—no matter from what source he got the ingredients—somewhat like the scale of rations we see prepared in the laboratory of the chemist and printed in some agricultural papers. I used to admire the adroitness with which he would out with his pencil and figure up the fractional parts of what we might call his carbohydrates, albuminoids and fat in the pedigree before him, and but few men have I met that had such intimate knowledge of the roots of the various tribes of Shorthorn cattle or was a greater enthusiast. Yet I venture to say but few men spoiled so many good ones. Now this man, though truly loving a rural life, was not a success because not practical. It was the same with his horses as with cattle. He spent lots of money in buying his blood lines, which consisted of Hambletonian, Am. Star and Morgan. But the ingredients would not mix properly, and, as might have been expected, but few trotters were produced.

His memory and practice have been recalled to my mind by reading so much in the agricultural papers of balanced rations. Now I don't dispute with the scientists as to the correctness of their figures or tables, nor want to belittle them in the least, for I appreciate their efforts, but I do think they too often neglect to advise a change of food, or rather that the various grains may be varied, and not that the same identical mixture be served up regularly three times each day all through the winter. As the "Druid" in *Post and Paddock* remarks, writing of carrier pigeons being employed to carry the results of the races to London from Goodwood, 55 miles distant: "Some of the best on a fine clear day have done the distance under the hour, but their powers of flight depend almost

**THE FARMER'S ADVOCATE**  
AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE DOMINION.

PUBLISHED BY  
THE WILLIAM WELD COMPANY (LIMITED),  
LONDON, ONTARIO, AND WINNIPEG, MANITOBA.

JOHN WELD, MANAGER.

1. THE FARMER'S ADVOCATE is published on the first and fifteenth of each month.
2. It is impartial and independent of all classes or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical, and reliable information for farmers, dairymen, gardeners, and stockmen, of any publication in Canada.
3. TERMS OF SUBSCRIPTION—\$1.00 per year in advance; \$1.25 if in arrears; sample copy free. European subscription, £s. or \$1.50. New subscriptions can commence with any month.
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entirely on the state of the atmosphere and their being kept in high condition by constant changes of food. This change is essential to man and beast; and the fact is so well known that in one of the petty continental States where it is forbidden to put felons to death, they kill them by feeding them entirely on veal and red wine." Neither do I think that they (the chemists) make sufficient distinction of sources whence the ingredients are derived. For instance, we know that there is great difference as a manurial agent between the nitrogen derived from ground leather and that obtained from sulph. ammonia; or in superphosphate of lime whether derived from bones or rock phosphate. There may not, chemically, be any difference, but practice proves conclusively that there is.

In working out some of these prepared tables, one is apt to doubt their value when turnips are tabulated in such a ridiculously low place by the chemist and yet the practical feeder well knows their value is much higher than that assigned. Is it not possible that the water in the roots is something more than ordinary water, the same as ammonia in guano is of more value than that found in leather. I have lately had the opinion that roots are much more valuable than the chemist would lead us to believe by reading a paper prepared by Mr. James Black, for publication in the report of the Highland and Agricultural Society. His researches extended over some eight counties, and he gives the system adopted by the most successful feeders in each county from these eight counties: "With considerably less than one-fifth of the whole population of the north side of the border, and not a larger proportion, perhaps, of the cultivated land to the north of that dividing line, contributed to the great London Christmas market some 2,000 of the 5,000 cattle offered for sale in it, and had their own share fully of the highest prices that were reached." A few extracts in my next will explain the system of feeding better than any words of mine.

[TO BE CONTINUED.]

**A Successful Year for the Western Fair.**

The report of the Directors of the Western Fair presented at the annual meeting of the Association, held in London, Feb 17th, was a very satisfactory statement of the year's work, showing an advance in the receipts over the previous year of over \$4,500, fully justifying the erection of the new buildings and the other improvements made which did much to increase the patronage and prestige of the show. Out of the surplus receipts last year, and the balance from the year 1895, the Board were able to apply the sum of \$8,234 towards the new buildings, which are completely paid for, and a balance of \$928 remains.

Capt. Porte, who had been President for several years, devoting much time and attention to the affairs of the Association, retires from the Board, and was presented by the Directors with a valuable gold watch as a mark of their appreciation of his past services. The election of officers resulted in the following being chosen: President, F. B. Leys Vice-President, Mayor Little; 2nd Vice-President,

Allan Bogue; Secretary, Thomas A. Browne; Treasurer, D. Mackenzie; Superintendent, Joseph Hook; Chairman of Finance, A. M. Smart; Chairman of Grounds and Buildings, J. H. Brown.

**Takes a Tilt at Mr. Macpherson's Figures.**

To the Editor FARMER'S ADVOCATE:  
In looking over your paper of February 1st I saw an editorial on Mr. Macpherson's letter, and turning over to the letter I read a very glowing article headed "How Can the Ordinary Farm be Made to Pay." By reading the letter I would judge that the writer has not made all his money by farming, for I fail to see much money to his credit by his statements for the amount of capital invested. Perhaps it is because, as the small boys say, I am only "an old hayseed, moss back, or pumpkin pusher" that I can not see through his statements rightly. Mr. Macpherson says he has a crop value for 1896 of over \$5,000 from 125 acres of land. It sounds large, but I do not doubt it; \$3,396 of that is winter feed, which he feeds to his cattle, hogs, etc., together with \$800 for heavy feed for same, for which he received \$2,640, for milk, pork, etc., sold, or cash \$2,040 for his over \$5,000 crop value. Then his manual labor cost him \$1,500; wear, tear and repair, \$500 per year, which leaves \$40 to live on, or interest on his capital invested. A farm like Mr. Macpherson's would be worth \$40 per acre, or \$5,000; buildings, machinery, and carriages, \$5,000; cattle, horses, pigs, etc., \$3,000; or \$13,000 in all, which, if on interest at 6 per cent., would be \$780, instead of \$40 by farming. Now, what we poor farmers want to know is how to make a small sized farm (a poor one at that) grow a good crop, or how to increase the fertility of it so a man can live comfortably on it, raise his family, and lay a little money by for a rainy day. Now, if you or some of your readers would give a little more information in the ADVOCATE on the above, we would appreciate it more than to read how a large farm, with large capital, yields a very small profit. Mr. Macpherson, in his "suggestions for Governments," denounces the Experimental Farms. I think they are doing a lot of good in testing new and improved seeds, etc., and then distributing the same to us farmers free. In that way we are furnished with new seeds which we would otherwise have to do without, which is worth far more to us than to watch some man's farming who has to get either of the Governments to his back. D. P. CAMERON.  
Stormont Co., Ont.

**Mr. McCulloch Criticises Mr. Macpherson's Methods.**

To the Editor FARMER'S ADVOCATE:  
SIR,—Some years ago it was no unusual thing to hear of farmers making plenty of money, and even in later years we still find a few who, by taking up some of the improved methods of farming, and by good care and management, hard work, and practice of economy in their farm and household affairs, have left their neighbors behind in the race and have made a financial success of their farm operations; but to be suddenly swept down upon by such a cyclone of unequalled success on every hand as that shown by Mr. Macpherson in his letter in your February 1st issue, and that, too, while so many farmers are crying "hard times" and "farming don't pay," almost paralyzes us, and whatever little success we had ourselves attained, when compared with his, seems only as a drop in the bucket, and scarcely worth mentioning. But on a careful perusal of his letter, many things are not so dazzling as they seem to be with first impressions. Now, we ask you, and also Mr. Macpherson, to suffer a little criticism of his plans, and though some of it should be somewhat adverse, we trust that it may even then be a help to my brother farmers, many of whom are struggling for an existence on an impoverished farm. We have at present to face small prices for all farm produce, but even with this there is a ray of hope, as nearly everything we have to buy for our farm or household use is lower also. But there is a great mountain in the way of success to most farmers, in that our farms have become impoverished by continually selling fertility off them, and they will not produce as in past years, and the problem for us to solve is, How can we increase the fertility of our farms? Not by putting large capital into them, but without the expenditure of large sums of money; not by the waiting of five years for a dividend, which time would suffice to land most of us in among farmers now without trying such an experiment, but so that we may live on our farms and at the same time follow such a system as will gradually, if slowly, increase their fertility. Now, the system outlined by Mr. Macpherson may be all right for those who can afford it, but the ordinary farmer is not a capitalist, and therefore can not put capital into his business. Neither can he afford to wait five years, nor yet one year, for the return from it; and what benefit would it be for the majority, even if the Government should bonus convert their farms into gardens at the expense of the whole country, if after all the example given in theory could not be brought into general practice. I am heartily glad that our Ontario Government is not experimenting on such a line, but that our farm superintendent at Guelph, Mr. Rennie, is trying to show to our boys, and to the farmers of the whole country, that it is possible to improve the fertility of our farms by putting into them that

with which they were filled when the land was new, and of which they have been gradually robbed, viz., a "supply of vegetable matter in the soil." Now, Mr. Rennie, and also Mr. Yuill—one of our best farmers and dairymen—both give us plans for doing this: by growing clover crops and green crops of one kind and another for manure, by using a short time rotation (three or four years), instead of an eight year course as advised by Mr. Macpherson, and this can be done at less cost, little by little, in a way far more suitable to the "ordinary farmer," than by the purchase of fertility by so extravagant a system as that we are advised by Mr. Macpherson. I thoroughly believe in intense farming, and that most farmers work or half work too much land, and do not keep near as much stock on their farms as they might do. I have full faith in the dairy cow and her possibilities, and that it is far better to sell beef and pork and dairy products than to sell grain and hay off our farms. In this I think Mr. Macpherson is on the right track, as his great success goes to prove, yet I think that even this plan can be followed on a much smaller scale, so as to be within the reach of those with smaller means, as I think Mr. Macpherson's plan is drawn on too large a scale for the "ordinary farmer," and also too speculative for "canny going men," and very few would make it a success, not forgetting that it is safer to "grow" into than to "go" into any business. Three tons of hay to the acre over an area of thirty-nine acres is a good yield even on rich land, and we may not always get it; also, twenty-nine tons of ensilage corn to the acre over a patch of twenty-six acres is surely more than we can hope for, but if we can we would strongly advise Mr. J. G. Snell to consider his problem of feeding his beef cattle at 4 1/2 cents per pound in the light of twenty-nine tons of ensilage to the acre, and it may help him in the solution, but this, I fear, is somewhat of a speculative crop, at least if outside the corn belt, and when quality of ensilage is at all considered, and due allowance made for grubs and cutworms, which often follow in the wake of a five years' term in grass. We notice that much of the results given is estimated and prospective, and we think that any farmer in presuming to do better work than the Government farms are doing should give actual results, as they do, so that we could compare. The expenditure for labor is high, but perhaps not too high for amount of work done, but is quite a surprise to most people, who think themselves about forced to do with as little help as possible in order to cut down expenses.

We notice that in figuring on the profits from cattle bought, Mr. Macpherson expects to more than double the purchase money. Now, I believe this can be done, if bought low enough and sold high enough, and all things favorable; but I still think that this is a somewhat speculative business for the "ordinary farmer," and might easily lead to great loss under adverse conditions. I think a much safer plan would be to raise a few steers of our own, with so much ensilage and cheap food, and we would be working on surer ground if not going quite so fast.

Mr. Macpherson answers the question as to whether these results can be made general by saying that it takes "long time," "large capital," and "high skill," and this is to practically answer "No" to the question. As we have already said, few have any capital to invest, and as few can afford to wait for "long periods for a return"; but as to the "skill required," if a man has lots of money and time given him, it should not require a great amount of skill to make some money; but where the result of skill and good management is most seen is where men start with no money and gradually grow from year to year, as we have seen men do, until they have become well-to-do, or at least have a competence; or, again, where men "with small means" take hold of a run-down farm and gradually improve it from year to year, at same time live on it and support a family. These are the lines upon which we may look for exhibitions of skill in future; and as skill is something which we may all attain in a greater or less degree, and as it is, along with good care and management, the secret of success in farming, as in everything else, it becomes us to take advantage of every chance afforded us of acquiring skill in our business and thus place ourselves in a position to help ourselves, instead of looking to the "Government" or any other source for capital or help to do for us what we can do for ourselves by using our brains and hands and the means of education afforded us by our agricultural papers, such as the FARMER'S ADVOCATE, and the help given us by our Government in experimental work and the securing of a market and shipping facilities for our farm produce, and through the medium of our Farmers' Institute system, which brings all these means of education within the reach of the "ordinary farmer," and at a trifling cost.

Peel Co., Ont.

R. McCULLOCH.

**Breeders' Association Meetings.**

The following dates are announced by Secretary Hodson for meetings of the Directors of the various Breeders' Associations. The meetings will be held at the Palmer House, Toronto, at 1 p. m. sharp on each day:—  
Dominion Cattle Breeders' Association, March 23rd.  
" Sheep Breeders' " " 24th.  
" Swine Breeders' " " 25th.  
Ontario Provincial Winter Show, " 28th.  
Each director is urged to attend, as business of unusual importance will be transacted.

[By Richard Association  
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STOCK.

A Retrospect.

[By Richard Gibson, before the Dominion Shorthorn Breeders' Association annual meeting in Toronto, February 3, 1897.]  
 "Watchman, tell us of the night?" "Cloudy overhead but bright and clear in the East, and all's well."

By this quaint illustration from olden days custom may we not aptly describe the present condition of the Shorthorn interest. It is without doubt cloudy, "but all's well," and I think if we take a retrospect of the last year's operations there may be lessons learned which may not only prove interesting and instructive, but also profitable.

In the first place, it is "bright and clear in the East." If we will consider the situation in England, we must confess the outlook is decidedly bright. Prices have been fully maintained, two notable sales have taken place, at each of which higher prices were realized than for some time; while the high-water mark for years past has again been reached, that of one thousand guineas or five thousand dollars. Again has South America been the principal purchaser, not only in numbers, but also quality; the very best that could be purchased have been secured, and price apparently was not thought of so long as they were enabled to get the best. In connection with this trade there are some facts to which I wish to direct your thoughts. The first is the continued demand for bulls. Last year, in drawing your attention to the fact, I asked: "Can nothing be done to get a slice of this trade?" Surely our climate, the crops, and amount of sunshine must more nearly assimilate with that of Argentine than does that of England, upon whose domain the poet informs us the sun never sets, yet for weeks and weeks together she fails to rise, at least to the naked eye. It may be urged, you have not the stock. My reply is that there are no Shorthorns worth buying in England or Scotland with which we cannot claim kinship for some of ours. Moreover, I make this startling statement, that whereas \$7,500 is the most that has been paid for one animal, as far as I am aware, to come to the North American continent, \$35,000 has been paid by Englishmen for one bred here, and for years England's breeders came here for their bulls, so that argument does not hold good.

It had been anticipated when last I addressed you that the Government of the day contemplated getting closer in touch with the stock breeders by appointing one who knew their wants, and who was, as it might be, one of themselves, with whom to consult, etc. It seemed to me as though one of the duties of such an appointee would be to enquire into the condition of foreign markets and the chance of securing an outlet for our surplus cattle, sheep, and horses. It is a matter with which private enterprise, as far as our breeders are concerned, can scarcely grapple. We have been so heavily handicapped of late that but few can afford to grapple with the question single-handed. The thought arises, would it be advisable to divert a small sum from the surplus of the Association towards assisting to ascertain cost of transportation, facilities of shipping, and best course to be pursued towards getting a footing.

Secondly—That most of these bulls are being bought to get steers, and so successfully have they been used that the steers shipped to English markets compare favorably with ours, so that if we expect to be in the race at all, it behooves our steer breeders to awake to the fact that \$50 bulls cannot compete with \$500 ones as steer getters, and that they must buy better bulls and be prepared to pay the breeder correspondingly higher prices.

Thirdly—If these South American Republics, with their depreciated currency, and with the consequent big premium on gold, can pay such high prices, are we to assume they could pay bigger if their national finances were on a sounder foundation. I am not a silverite, but I am almost persuaded when I see such results, and more than a passing thought is their due. Another phase of the English situation is the interest taken in the dairy Shorthorn, and there is evidence that a boom in that direction is at hand, and so persistent are the believers in the value of the Shorthorn as a dairy animal that there are heard mutterings of a break from the parent society, and the establishment of a new Record even, as the breeders of the Lincolnshire reds have done. The views of Mr. Bates are gradually being more and more impressed upon the breeders of England: "That milk, butter and even cheese were of almost equal importance with beef in the selection of a breed of cattle."

Turning to ourselves, "Cloudy overhead but clear in the East" may pretty accurately describe our situation. Cloudy indeed, but I believe that the god of morn is surely rising high in the East and dispelling those clouds. The first rift I note is the assurance that quarantine is to be removed. No such calamitous blow was ever dealt at the cattle industry than the quarantine and tuberculin combination. It paralyzed the breeder's efforts, destroyed his enterprise, and circumscribed his territory. Fresh blood may now be instilled in our herds, and the race for England's markets with South America is made more equal, and with the establishment of the dead meat trade I see the clouds rising higher and higher, and the golden lining appearing; and with a free field we ask no favors. Though Argentine may have a kinder climate, we can more than offset that by the skill

and perseverance of our breeders. Though the United States may have a luxuriant corn belt, and naturally many advantages, still we have our root crop to counterbalance, and our people are more thorough in their methods and management; and though handicapped in many ways we hesitate not to enter into friendly rivalry with them. And now that the clogs to our industry are likely to be removed, I hope you each may feel as sanguine as I do, and that at our next annual meeting you may echo the watchman of old's cry: "All's well!" "All's well!"

Why Do We Breed Shorthorns?

[Paper read at the annual meeting of the Dominion Shorthorn Breeders' Association, February 3rd, 1897.]

BY A. W. SMITH, MAPLE LODGE, ONT.

To this question probably almost every breeder would answer "to make money," and no doubt quite correctly, and yet the breeder who is in the business simply to make money is seldom a success as a breeder, and almost an injury to the breed. The most successful breeders have doubtless helped themselves to eminence by having in view the profitability of the type for which they were striving. Bates, with his beautiful, graceful, broad-backed favorites, always giving the owner a handsome profit through the dairy, aside from the great improvement in the beefing qualities of the cattle, the result of their cross upon the ordinary cattle of the country.

The Booths, and those breeding to their type, made fortune, as well as fame, with their grand large, heavy-fleshed cattle, selling profitably then, because of their massiveness and readiness to fatten.

And, again, the Scottish breeders, with Cruickshank in the lead, after years of patient perseverance won abundant reward for producing still another and different type, one which, following those already mentioned and filling in a necessary quality to suit the change in demand, built up a smaller class of cattle, maturing quickly and proving profitable almost whenever used judiciously.

And the breeders of to-day, who, casting aside all false prejudice to pedigree, gather the best from the fruit of the labor of all these great benefactors of the breed, and, as a master artist with a few bold strokes of the brush produces a picture which captivates the world, so these breeders produce the type of beast which will bring a full, ripe carcass of beef of good size, with a massive appearance, at an age unthought of in the earlier days of the breed, possessing milking qualities to recommend them as the cattle for the general farmer, and stamped with that grace and carriage necessary in the successful show animal of to-day. These breeders attain to an ideal type that is higher than that of the past and leaves more profit than is possible to the man who is breeding simply for the money there is in it.

All these breeders have worked and thought and waited for the realization of a desire to produce a type approaching more or less closely to an ideal animal produced first in their own imagination, and willing to accept such profit, though sometimes small, which is sure to follow. They are always a benefit to the breed.

On the other hand, then, is the speculating capitalist, who may invest largely in Shorthorns (a benefit to some individual breeders very often, I will admit), as has been done so frequently in the past, and then breed simply on paper or from pedigree, and whose highest ambition as to improvement may be to "corner" some family or strain of blood, and by systematic booming force them up in price. Then, having made them fashionable, if he be adroit and does not foolishly imagine himself a breeder in the best sense, he will sell out, making some money, but seventy-five per cent. of the purchasers will lose. The result: injury, and sometimes almost disaster to the breed.

A more numerous class of breeders at the present time, as well as the past, and whose injury to the breed is now far-reaching, is composed of those men who, being quick to follow in the wake of other men who to them seem to be making money, they perhaps see bull calves selling for \$100 or over, and count a clear profit of \$75 or \$80 over the steers they have been raising, purchase a cow or two, and then, without any idea of the animal they wish to breed, simply have the cows raise calves. The sire may be very inferior, of a type likely to be avoided altogether by the skillful breeder, yet they expect their calves to sell for \$100, and of course they are disappointed; they forget that they have not purchased the skill and experience of a successful breeder, that they have not, as he very often has done, patiently for years sold his surplus for one-half the price he now gets, yet determinedly breeding for the improved type he has in view.

This class of breeders become disgusted with the breed, and not because of any fault of that breed, but because of error in their own judgment, and, being dissatisfied with themselves, as quickly as possible dispose of what they consider then a losing property; or, worse, allow them to degenerate through continued ill-mating and carelessness, and then denounce the result or effect as the cause of that same result, and, through citing their disappointment, cause further injury to the breed by discouraging men who would be a benefit to the breed, and a credit to the ranks of the breeders, from investing as they would because of their natural love for a good and comely beast that they can raise with reasonable promise of profit and shape to their own taste, always being a source of profit as well to the established breeder.

Our Scottish Letter.

The chief event in the agricultural world here since I last wrote was the Scottish Stallion Show at Glasgow on Friday. Many good horses were exhibited; we have seen better, and we have also seen worse. Horses are a good deal bigger than they were; judges have accepted the inevitable, and sacrificed a little beauty for the sake of greater substance and strength. We do not see that there has been any sacrifice of quality. The weather this year was exceedingly disagreeable. It was dry above, but miserably damp below. In point of number the show was deficient as compared with last year. The aged horses which competed for the Glasgow district premium were not a lot of startling merit; we have seen better at a Glasgow spring show, and at the same time let it be granted we have seen worse. The short leet selected by the judges (Messrs. John Anderson, Middle Quarter, Shettleston; Alex. Harvie, Nitshill, and William Rodger, of Crook) were Mr. Riddell's two black horses, Lora Wolsey 9577, and Moneycorn; Mr. Marshall's extremely handsome horse, Hiawatha 10067; Mr. William Clark's thick, compact, short-legged horse, Royal Exchange 10000, son of Sir Everard 5353, which won the premium two years ago; Mr. A. Jackson's very big and heavy, but perhaps rather plain-looking horse, Prince of Craighend 10104, which stood well up last year, and Mr. Alex. McRobbie's very heavy, massive horse, Prince Stephen 9363, which improves with age. The judges took a terribly long time to decide which of these was the best horse, and finally, we hope, pleased themselves by awarding the premium for the third time to Mr. Riddell's Moneycorn. This horse's sire, Prince of Albyn, won the premium as a three-year-old in 1886, and was a horse of great substance and weight; got by Prince of Wales 673, out of one of the mares which the late Mr. Drew brought from England. Moneycorn wears his ten years well, and was always very defiant of the causeway; in fact, that is decidedly his best point.

The open class was judged by Messrs. Robert Stevenson, Macharloch, Campbeltown, and David A. Hood, Balgreddan, Kirkcudbright, and their short leet consisted of 9 or 10 very grand horses, exhibiting freshness, quality, substance, and style. They were all horses which had previously distinguished themselves in the show-yards. One was Mr. David Mitchell's big dark brown horse, Prince of Millfield 9650, which as a three-year-old was regarded as one of the best horses of his age exhibited in Glasgow. He was got by Orlando 8082, decidedly the bonniest three-year-old horse shown in Glasgow during the present generation, and his dam was the celebrated champion mare, Sunray, one of the sweetest and most evenly proportioned mares exhibited during the past twenty years. Another short leet horse was Mr. R. O. Macfarlane's Goldmine 9540—a thick, typical Clydesdale, of good quality, with clean bones and sound feet. As a yearling he was well nigh invincible, and won the cup at Glasgow, and he promises to make an excellent breeding horse. He has been much sought after for district societies, and this year is the premium horse for Olackmanna. First prize was awarded to Mr. Peter Crawford for the fine horse, Prince of Carruchan 8151, whose career from first to last has been notable enough. He was bred by Mr. John Macraig, Challoch, Leswalt, and was first seen in public at the H. & A. S. Show at Dundee in 1890, where he was first. He enjoys the unique distinction of never having worn a second prize ticket in his life. He was first at the H. & A. S. in 1890, 1891 and 1893, and he was first at Glasgow Spring Show in 1892 and 1897. To crown all, on this occasion he carried off the Cawdor Challenge Cup for the second time, and so won it outright for his popular owner, Mr. Peter Crawford. Second prize was awarded to Mr. David Riddell for his fresh young horse, Good Gift, which in the previous year stood second as a three-year-old in the same yard. This is one of the produce of Gallant Prince, and his dam, Lothian Queen, was a very fine prize mare. He is, to our thinking, the sweetest kind of horse Gallant Prince has yet produced. He has excellent feet and legs, and is very thick and wide. Mr. Marshall's Hiawatha was third, and in this had ample revenge for his position in the previous class, as he now beat far heavier competitors than those placed in front of him before. His breeder was Mr. Wm. Hunter, Garthland Mains, and his sire was Prince Robert, 7135, which once won in this same class. Mr. Kilpatrick's celebrated old horse, Prince of Kyle 7155, was a strong fourth. He once won the Cawdor Cup, and has greatly improved in recent years, having thickened out wonderfully and gathered substance. Mr. McRobbie's Prince Stephen, which followed, is a fine useful horse; and the sixth, Mr. Pilkington's County Member 10051, has wonderful sweetness and quality. Mr. Jackson's Prince of Craighend 10104 was seventh. It is worth noticing that the dams of the fourth, fifth, and seventh were Darnley mares.

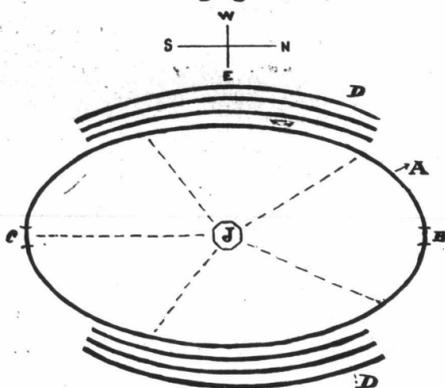
Three-year-olds were quite a superior class of horses, and as the two sets of judges practically corroborated one another, we need only mention that Messrs. David Buchanan, Robert Renwick, and John Whyte selected Mr. James Kilpatrick's greatly improved young horse, Cawdor Cup 10045, for the Glasgow district premium. The other two judges, Messrs. James Lockhart and William Kerr, also selected him for first place in the open class, and there was no doubt at all about his title to the place. Last year this great colt appeared at this same show a lean, unfed two-year-old, with quite

phenomenal action and great style. He went right to the front, and although fortune did not favor him quite so much during the season, he was never far away when work was being done. He has thickened and deepened immensely, and is a horse which would take a deal of beating. His combined size and action are somewhat unusual. He was bred by the Earl Cawdor, and his sire was the renowned champion horse, Prince of Kyle 7155, while his dam was the well-known champion prize mare, Lady Lawrence, which was once owned by Mr. Dunn, and was bred by Mr. Oliphant Brown, one of the last survivors of the old brigade. Mr. Walter S. Park's second prize horse was King's Knight 10071, which stood first at the H. & A. S., Perth. This is a nice, sweet horse, not so big as Cawdor Cup, but of quite as much quality. He was got by Mains of Airies, and his dam belongs to the same tribe as the dam of Prince of Wales 673, being a direct descendant through the female line of that famous mare. Third prize was awarded to a horse entered by his owner, Mr. Alex. Scott, as Prince Murat, but the horse known last year as Balmedie Prince Charming. He was bred by Mr. Lumsden, and was got by Prince of Albion 6178, out of the lovely mare, Enchantress 12236. This horse was champion at Aberdeen last year, and is the sterling premium horse this year. Mr. Alex. Simpson's horse, Royal Hunter 10121, which stood fourth, is quite a useful, strong, clean-boned colt, bred by Mr. Hunter, Garthland Mains; and Mr. Alex. Scott showed an excellent colt in Neil Gow 10244, bred in Yorkshire, but a thoroughly big, sound, well built, thick horse. He got fifth. Mr. Taylor's Sir Archie 10134, which stood sixth, is by Sir Everard 5353, and Mr. Riddell's seventh, Gold Mark, is by Castlereagh, and was bred by the Marquis of Londonderry.

There was nothing very notable amongst the two-year-olds. Indeed the class was rather disappointing. Mr. William Taylor was first, with Sir Oswald 10288, a big, useful horse, got by Prince of Scotia, but there was nothing very startling about the quality of the others. It will be of greater interest to Canadian readers to know what horses are now the most successful sires of horses selected for breeding, and of the horses selected for districts this season, and winners of prizes at this show, the sires are these: Prince of Wales 673, 11; Macgregor, Prince of Albion, Cedric, and Castlereagh, 5 each; Sir Everard, Gallant Prince, Prince Alexander, Mains of Airies, and Prince of Carruchan, 4 each; Darnley, 3, and others lesser numbers.

SCOTLAND YET.

A Judging Arena.



LIVE STOCK JUDGING ARENA.

A represents a picket fence all round.  
B, horse gate.  
C, cattle gate.  
D, seats (amphitheatre style).  
J, stand for judges, bookkeepers, etc. (roofed over and supplied with chairs).  
The five spaces separated by the dotted lines (which are only imaginary) are for the various classes of horses and cattle.

The important part played in the onward march of agriculture, especially in all branches of live stock husbandry, by the modern industrial exhibition will be readily conceded by all who take any interest in these matters. The stimulus and healthy rivalry created by these annual events reach out to the farthest limits of our land and exert a wonderful influence in improving the methods of breeding, feeding, caring for and the management of all classes of live stock. While exhibitions have done so much for these interests, it may be truly said, on the other hand, that the exhibitions are so dependent upon the live stock interests that if these were withdrawn there would be little further use for the annual fair. These interests, then, are interdependent, and each now recognizes the importance of the other. Perfection on either side is not yet attained. In the history of associations of this kind there is a period when the circus element is unduly magnified. The public, however, soon become surfeited with this sort of thing, and then there is the reaction toward a more solid and enduring basis, and while still retaining what is best of the circus element, and providing lively entertainment for all visitors, the more important and educational departments receive due consideration. That the exhibition of horses and cattle, where proper facilities are provided, will attract an audience can not be disputed since the Columbian Exposition, when thousands and thousands of interested spectators daily occupied seats in the magnificent live stock pavilion solely to witness

the horses and cattle parade before the judges. In the more prominent Canadian shows perhaps nothing could be added that would be as much appreciated by both exhibitors and the public as would a proper judging arena for all classes of horses and cattle. At the Toronto Industrial last fall, an influential body of horse exhibitors urged upon the management the absolute necessity of something like adequate facilities for letting the public see the horses while out in the ring. Last year the Missouri State Fair, held at St. Louis, provided a magnificent covered pavilion, with seating capacity for 30,000 people, where all judging was done, and this was thoroughly appreciated by the public. A year or two ago the ADVOCATE suggested a judging arena for the Winnipeg Industrial, but so much building and stabling being then required, it received no further attention. Now, however, when the success of this fair is assured, a live stock pavilion is among the most urgently needed improvements. We would suggest about the following plan: A good-sized oval ring, neatly fenced, with several tiers of seats arranged along both sides of the oval; all horses and cattle to be judged within the inclosure during certain well-advertised hours each day till the work is completed, each and every animal to have conspicuously displayed a number corresponding to its number in the live stock catalogue, where name, owner, and other particulars are given. The space could be allotted about as indicated in the accompanying sketch, then the public could sit down and comfortably and intelligently watch the one or more classes of stock in which their particular interests lay.

If it is found that these suggestions and this plan cannot, for sufficient reasons, be adopted in their entirety at first, it may be that modifications of these can be utilized for the present, with a view to further extension in future as results may justify. We suggest that the breeders, when they meet in convention or in their executive committee meetings, will discuss this matter and urge upon the directors of the leading industrial fairs the advantages of such an addition to the educational features of the exhibitions.

Look Out for the Lambs.

The good shepherd will not neglect to make frequent visits to the sheep fold during the lambing season to receive the newcomers and give them a welcome to a new world. He will not begrudge a little loss of sleep if he has reason to expect an increase in the family during the night. A little self-sacrifice at this time may mean a good deal in the record of success or failure in the results of the season. Regrets are vain, and can do little good when a good lamb has been lost for want of a little attention at the right time. Give the lamb a fair start and he will soon look out for himself and will repay you for any care bestowed upon him.

In connection with the care of the sheep in lambing time, it is well to be provided with a few low hurdles—five or six feet long—for the purpose of making temporary pens to receive the ewe and her newborn lambs till they get acquainted with each other and the lambs learn to help themselves to nourishment, but we would not advise keeping them in these small enclosures many days. The lambs will soon need exercise to keep them in the best health, and there is danger that in his kindness the shepherd may overfeed the ewe with heating food, which will cloy her appetite or injuriously affect the lamb through her milk. As soon as the lamb will follow its dam it is better for both to run with the other sheep, where the ewe will have the stimulus of competition in working for her feed and will not be liable to get more than enough. The ewes that have lambed should have a pen to themselves, so that they may be more liberally fed than the balance of the flock.

When the lambs are two weeks old they should be provided with a separate enclosure, with a "creep" or hurdle with slats, so that the lambs can pass through and the ewes cannot. Have a low rack and a trough in this enclosure, and feed some clover hay and ground oats and bran. The little fellows will be proud of their pen and soon learn to eat regularly and grow rapidly and will not make as heavy demands upon the ewes as if they were hungry and had nothing but mother's milk to depend on.

"Should assistance be given to a ewe during lambing?" is a question to which, in a general way, we should answer no. In normal cases, no interference should be practiced. Patience should be exercised, and time given the ewe to work out her own deliverance. If, after laboring for an hour or two, she makes no progress, it is well to examine and determine whether the presentation is all right, and, if so, give the ewe more time and she will generally get through all right and be less liable to after-trouble than if assisted. Many a ewe is ruined and lost by the attendant being too officious. Of course, if the presentation is a false one, assistance should be given, but no unnecessary force should be used, and when the foetus is brought to its natural position the ewe had better be released and allowed a little more time.

An Indispensable Adjunct.

To the Editor FARMER'S ADVOCATE:  
I have been greatly pleased with the ADVOCATE this year, and think it has made more progress in real practical topics connected with farming and stock raising than in any two years since I have been reading it; in fact, I think it is an indispensable adjunct to every farmer's household, and recommend it as such.  
T. C. WALKER.

Points in Sheep Farming.

[From a Farmers' Institute address, on a Northern Ontario tour, by Joseph Yull, Lanark Co.]

On account of the broken state of the country in parts of Northern Ontario sheep farming is possibly the most profitable industry to which the farmer can turn his attention. So far the lumber business has consumed all the produce the farmers had to spare, but lumbering will soon be a thing of the past, and farmers are anxiously looking for something else.

**Lambing Time.**—Mr. Yull recommended a warm place for ewes at lambing time. If the lamb is chilled at birth, take it in beside the kitchen stove, bathe it in warm water and rub dry, and have a supply of nipples (you will get them at the drug store for five cents each). Take an old castor oil bottle and milk some of the mother's milk into it (or, if you have new-come-in cow's milk, it will suit the purpose), add a little ginger tea or some other stimulant and give to the lamb. Take it back to its mother, and see that it gets a suck. Attend to it for a few days, and see that the mother takes with it. If a ewe loses her lamb or lambs and another ewe has two lambs, and you want the ewe that has lost her lambs to raise one of the other ewe's lambs, as soon as the lamb dies, while it is yet warm, take the skin off, milk some of the ewe's milk over the lamb skin and tie it on the living lamb. If the ewe has a large flow of milk, the chances are she will take with the lamb at once. The ewe and lamb should be put in a small enclosure by themselves. If she does not take to the lamb, bring a dog into the enclosure and she will take to the lamb at once. Tie the dog in the enclosure for a few days, when the trouble will be over. Lambs should be castrated when between two and three weeks old. As soon as the lamb is born the ewe should have a warm drink composed of one pound bran and one teaspoonful of salt and half a gallon of warm water. Ewes should be fed liberally to keep up the flow of milk. One pound peas, one pound oats, four pounds roots and one pound bran, and all the clover they will eat, makes a very good ration for ewes while raising their lambs. As soon as the grass is good the roots may be discontinued. The grain portion of the ration should be continued as long as they will eat it. The lamb should be taught to eat oats as soon as possible—that will be when it is about ten days or two weeks old. Teach them by putting a few grains of oats in their mouths, and hold the head up for a few minutes. As soon as they learn to eat oats out of the hand, have a small enclosure built of spars so that the lambs outside can see what the lambs inside are doing. Have what shepherds call a "creep" in the door; that is, an opening large enough to admit a lamb, with a roller on each side, so that the lamb can pass through between the rollers and not rub out its wool as a solid surface would. These rollers can be moved back as the lambs grow. Lambs should be fed a little grain all summer. [NOTE.—Many successful shepherds do not find it needful when the flock is on a good run of pasture to supplement it with grain, nor in the fall either when the lambs have access to clover, rape, etc.—ED.]

Lambs should be taken from their dams the first week in September, and should be kept separate all winter and fed two feeds of well-cured pea straw and one feed of clover, with one pound peas, oats or barley, and two pounds roots.

Ewes should not be allowed to raise lambs until they are two years old, and, unless she is very valuable, she should not be allowed to raise lambs more than twice.

**The Male.**—Always use a pure-bred male of whatever breed suits your taste and requirements, but never use a grade male no matter how good a sheep he is. No male should be used younger than a yearling. Choose a snug, compact male, not an overgrown animal, but a typical representative of the breed—a strong, vigorous, active, masculine animal without being coarse. Before breeding time commences the male should have a liberal supply of oats. I find a very good course to pursue is to turn him out when we come in to dinner and put him in before we go out to work, which will allow him one hour each day with the flock, which is quite long enough. Mark him with red for the first three weeks, then mark him with blue. The ewes marked with red will lamb earlier than those marked with blue. He should be in a close pen where he will not see the flock. He should have all he can eat of stimulating food all through the breeding season.

**When to Have Lambs Come.**—That depends a good deal on the requirements. If lambs are wanted for the Easter market they would require to come as early as possible. If for the American market, unless a warm house is provided, perhaps it is better not to have them come till about the first of April.

**Winter Care of Sheep.**—The best building to winter sheep in is a bank-barn, with three sides closed and the front towards the south open; this may be provided with doors, which can be closed during a storm. This building must be dry. Sheep will not thrive with wet feet. A very good sheep house may be constructed by inclosing three sides with two ply of lumber with tar paper between, the front to the south being open. Sheep do not require a warm house, but should be free from drafts. All doors which breeding ewes are re-

quired to provide to produce warm stormy weather should not feel warm a plan contract di-

Feed for and clover best ration sulphur times. All cover. The number of inch auger, wood tar and sulphur. The egg in the head.

Lambs the first week on a bare day for feed they are dried or older and you do not price to ten lambs), turn pound of b long as the frozen have all the early clean; still of five pounds they will be Always av glutted, wh year. Have have it in allow the la eat too muc

The Feed

- 1.—At what time should the ewe be fed?
- 2.—(a) What should be fed to the ewe during the lambing season?
- 3.—How do you place summer foods?
- 4.—How do you wean the lambs?
- 5.—What is the best care, feeding, etc., looking to the health of the lambs?
- 6.—At what age should the lambs be weaned?
- 7.—What is the best time of year for lambing?
- 8.—What is the best feed during the lambing season?
- 9.—Have you any special method of producing it?

A Pou

- 1.—We produce from 10 to 12 lambs to second litters.
- 2.—We care for the lambs properly attention or winter place at least farrow. Have young pigs fed and change in order to damp bed. little skim milk, coal, etc., is
- 3.—Brood and seldom
- 4.—By feeding keep her and either to get themselves a milk in it.
- 5.—Good in, with out
- 6.—From how they have at five months which is more weights.
- 7.—If a he it takes to tirely lost to
- 8.—Shorts junction with profitable fee
- 9.—The combined by the be produced make a fair per pound liv Norfolk Co

quired to pass through should be at least five feet wide to prevent crowding. Have a small inclosure made warm for ewes at lambing time. In wet or stormy weather sheep should be shut in. Sheep should not have so warm a house that their wool will feel wet to the touch. If sheep are kept in too warm a place they are very apt to catch cold and contract disease.

**Feed for Breeding Ewes.**—Well-cured pea straw and clover hay with one pound oats per day is the best ration, with two-thirds salt and one-third sulphur where they can have access to it at all times. All sheep should have this in winter under cover. The best way to salt in summer is to bore a number of holes in a piece of timber with a three-inch auger, four inches deep, fill two inches with wood tar and the remaining two inches with salt and sulphur. The tar will prevent the fly from laying the egg in the sheep's nostril which causes grub in the head. The sulphur will prevent ticks.

Lambs should be separated from their dams the first week of September. Ewes should be turned on a bare pasture and examined carefully every day for fear of an overflow of milk. As soon as they are dried off take all the ewes three years-old or older and any inferior ewes and all the lambs you do not wish to keep (but do not allow any price to tempt you to part with your best ewe lambs), turn into a field of good grass, feed one pound of beans or peas per day to each sheep as long as the grass is good; when the grass becomes frozen have an inclosure as already described, feed all the early cut, well-saved clover they will eat up clean; still continue one pound of peas or beans with five pounds of roots per day. By feeding in this way they will be in good shape for the Easter market. Always avoid marketing when the market is glutted, which generally occurs in the fall of the year. Have a piece of rape for autumn feed, and have it in connection with a grass field; do not allow the lambs to go on to it hungry for fear they eat too much at once and cause bloating.

**The Feeding and Management of Swine.**

(Continued from page 73.)

1.—At what age do you choose to have sows farrow their first litters, and do you prefer one or two litters the first year, and also after that time?

2.—(a) Which do you find most success with—fall or spring litters? and (b) how do you manage your spring-farrowing sows during the winter season with regard to quarters and food with a view to economy in feeding and welfare of the offspring?

3.—How do you summer your brood sows, and what value do you place upon pasture and by-products of the dairy as summer foods for them?

4.—How do you manage the sow and pigs from the birth of the litter to weaning time, and at what age do you prefer to wean them?

5.—What would you recommend in the housing, general care, feeding, and exercise of pigs from weaning till marketing, looking to growth and good health?

6.—At what age and weight would you market live hogs or dressed pork in order to obtain the greatest profit?

7.—What is your estimate of the advantage or disadvantage of keeping the young pigs gaining rapidly without a halt from the time of weaning until they go to market?

8.—What do you consider the most profitable ration to feed during the last two months of fattening?

9.—Have you made any calculations as to the cost of a pound of pork, live or dressed, according to your method of producing it, and with what result?

If any important points are omitted our readers will oblige by dealing briefly with them.

**A Pound of Pork for Three Cents.**

1.—We prefer our sows to farrow the first litter at from 10 to 12 months old, and one year from first to second litter; after that, generally speaking, two litters per year.

2.—We cannot say that we find any noticeable difference between the spring and fall litters when proper attention is given to the sows. For spring or winter litters we keep sows in a warm, dry place at least one week before they are due to farrow. Have fenders all around pen to protect the young pigs from being squeezed against the wall, and change bedding say twice each day for awhile, in order that the young pigs would not lie in a damp bed. We do not feed sow much at first. A little skim milk and shorts, with full access to charcoal, etc., is sufficient.

3.—Brood sows we always summer on pasture, and seldom anything else except plenty of water.

4.—By feeding sow sufficient wholesome food to keep her and her young thriving, but not allow either to get too fat. Give young pigs a trough to themselves after one month old, with a little new milk in it. Wean from six to ten weeks old.

5.—Good comfortable quarters to feed and sleep in, with outside exercise as much as possible.

6.—From five to seven months. All depends on how they have been cared for; if properly handled at five months they would go 150 lbs. to 175 lbs., which is more profitable to the breeder than heavier weights.

7.—If a hog is not kept growing, all the feed that it takes to keep him alive during that time is entirely lost to the feeder.

8.—Shorts and some heavier feeds mixed in conjunction with dairy slops, as a rule, is the most profitable feed to fatten on.

9.—The cost of a pound of pork would be determined by the value of the food consumed, but can be produced with the present price of food, and make a fair allowance for manure, from 3c. to 3½c. per pound live weight.

WM. JONES.

Norfolk Co., Ont.

**Early Fall Litters Most Profitable.**

1.—At twelve months old or sooner if sow is well developed, as the sooner they are put to breeding the better mothers they make, although they may not have large litters for one or two litters, and in all cases two litters a year if possible.

2.—Early fall litters are the most profitable, as they are fit to sell when pork is dearest, and they grow faster and have a good start before the hard winter sets in. Where pigs are sold for breeding purposes the spring litters are the most profitable. The sow should be allowed to run about in winter or summer and have a dry, warm place to lie in.

3.—A run to any kind of pasture in summer is good. A drink of skim milk is all a sow will require, when it is to be had. Whey is not good for a sow in farrow unless grain is fed with it. Whey and pasture alone will not do.

4.—Feed the sow slop in which bran is soaked, cooked potatoes, etc., for the first three days, then add grain. We feed skim milk, soaked peas and bran and find them the best feed a sow and pigs can have. At two to three weeks old the pigs will eat the soaked peas (by throwing them in a shallow trough) and will grow and gain rapidly from the day they begin to eat.

5.—At six weeks old take the sow away and they will not miss her, and will thrive right along. Keep them in a dry, warm pen, with a good yard to run in, and do not let them out until they are fit for market.

6.—Market them at the weight of 125 to 175 pounds.

7.—There is no profit in raising pork if they are not kept growing from the start.

8.—Peas and milk, with corn added as they grow older.

9.—I have made no calculations as to the cost of a pound of pork, as that depends on the price of grain.

These suggestions are for the eastern end of the Province, where we raise grain and keep dairy stock and peas are always a good crop, and we use whey for growing hogs with good results when fed on grain. We do not keep store hogs, as they will not sell for near as much per pound as young, well-fatted pigs. In the west end of the Province they keep hogs longer, as they feed more roots, bran, shorts, etc., and in many cases boil or steam the food, which I do not think pays for the extra trouble.

Hastings Co., Ont. J. M. HURLEY, M. P.

**Keep the Pigs Growing from the Start.**

1.—We do not choose, under any consideration, to have our sows farrow their first litter before one year old, and would prefer at sixteen months. Would have two litters per year from the start, providing the first litter was not before sixteen months.

2.—(a) We have most success with litters coming about first of April. (b) After breeding our sows in early winter for spring litters we turn them in yard with good comfortable sleeping quarters provided, and feed them enough corn to keep them in good strong condition until about three weeks before farrowing, when we take them in and feed them liberally with some good nourishing, milk-producing food until farrowing.

3.—After weaning our spring litters, if there is good pasture, we turn our sows out and pay very little attention until a few weeks before farrowing, when we commence to feed them again, as described above. We would place quite a high value on dairy by-products, especially for young pigs.

4.—When the sow is about to farrow, we place her in a comfortable pen with dry, fresh straw bed; and if weather is cold when the little pigs are coming, we stay with them until we see that the little fellows have a start in life, which is half the battle. We give the sow nothing the first day after farrowing but cold water, then we feed sparingly for a few days, of thin slop made of shorts, after which time we commence to increase the ration as the little pigs increase in size, until they are two or three weeks old, when the sow is able to take about all she will eat of not too heavy food, and the little pigs will commence to take a little of the best we can provide, put in a small trough where they can go to it at will, until they are about eight or ten weeks; when they are feeding well the sow is separated from them, and she is scarcely missed. We give the sow and pigs exercise from the start, letting them run out for a while each day as soon as the little pigs feel like going.

5.—Would recommend a good comfortable, dry pen, not crowded, kept well cleaned; would feed all they could eat twice a day of shorts, chopped barley, or a mixture of grains, made so thick they can scarcely drink and so thin they can scarcely eat it, and have all the dry meal they will eat between times placed before them. Always supply plenty of water.

6.—Think it advisable to market hogs just when they are in shape to bring the highest market price; about six or seven months, when they should weigh about 200 lbs. each.

7.—The advantage of keeping young pigs growing rapidly from the start is, that it takes quite a lot of food to keep a pig living without making any gain, and it takes just so much above that amount to make a pound of gain; so the more rapid the gain, the shorter the period life is required to be sustained to produce the desired weight of hog, therefore a saving of feed, saving of labor, and several other small advantages I will not enumerate here.

8.—See latter part of question five.

9.—We have not made any particular calculations.

In addition to above treatment, in winter months we supply them with a mixture of ashes, lime, charcoal, copperas, sulphur, resin, etc., to aid digestion and destroy parasites.

I do not presume to say that the above is the most economical method of producing pork, but I am convinced that there is a fair profit to be derived by a judicious administration of such treatment.

W. N. TAPE (of Tape Bros.).

Kent Co., Ont.

**FARM.**

**Cultivation and Seeding.**

The occasional spring-like days that are already upon us forcibly remind one that seed time is coming and that preparation must be made at once in order to seize the first opportunity of getting the seed into the ground in proper condition. Not only is the proper time of seeding, the proper condition of the land, and quality of the seed important, but we are all aware that some varieties of grain and fodder crops give much better results under the same conditions than do others. Because of this we each year at this season serve up to our readers much valuable information upon these matters, gathered from the experience of the various Canadian Experimental Farms, Ontario Experimental Union, and from a number of successful farmers in various parts of the Dominion.

**THE EXPERIMENTAL UNION.**

The good work of the Ontario Agricultural and Experimental Union was referred to in our Jan. 1st issue in connection with the report of the annual "Union" meeting. We may say in brief that its function is the testing of the best known varieties of farm crops over the entire Province in all varieties of soils. The following tables show the different varieties and average returns of straw and grain and comparative value as determined from hundreds of experimenters over Ontario last year.

PEAS.			
Variety.	Comparative Value.	Straw. Tons.	Grain. Bush.
Early Britain.....	98	1.09	23.5
Chancellor.....	90	1.05	27.6
Egyptian.....	80	1.14	27.4
Prussian Blue.....	100	1.21	26.7

SPRING WHEAT.			
Variety.	Comparative Value.	Straw. Tons.	Grain. Bush.
Harrison's Bearded.....	100	1.10	13.7
Bar Tremena.....	92	1.09	13.2
Wild Goose.....	76	1.10	13.1
Wellman's Fye.....	81	1.06	12.8
Pringle's Champion.....	65	1.00	21

BARLEY.			
Variety.	Comparative Value.	Straw. Tons.	Grain. Bush.
Mandscheuri.....	100	1.35	30.7
Oderbrucker.....	84	1.35	34.7
Cal. Brewing.....	61	1.26	29.7
Pringle's (hull-less).....	66	1.40	28.3
Kinna Kulla.....	48	1.36	25

OATS.				
Variety.	Rusted Comparison.	Comparative Value.	Straw. Tons.	Grain. Bush.
Siberian.....	78	100	1.4	56.1
Oderbrucker.....	89	88	1.5	56.6
Bavarian.....	97	90	1.6	54.4
Joanette.....	83	78	1.5	54.3
Pol. White.....	100*	75	1.4	52.2

MIXED GRAINS FOR GREEN FODDER.			
Bushels.	Comparative Value.	Tons Green per Acre.	
Oats, 1½; peas, 1.....	100	7.4	
Oats, 1½; peas, 1; tares, 1.....	91	7.3	
Oats, 1½; tares, 1.....	77	6.9	

MILLET.		
Variety.	Comparative Value.	Tons—5 Yrs. Average.
Salzer's N. Dakota.....	100	7.7
Golden Wonder.....	85	6.5
Common.....	75	5.2

Average tons, green, per acre for 5 years..... 4.66

CORN.			
Variety.	Condition.	Ears. Tons.	Whole Crop. Tons.
Cloud's Early Yellow.....	late milk	4.3	18
Mammoth Indian.....	firm dough	4.5	16.6
Wis. Early W. Dent.....	dough	3.7	16
Rural Thoroughbred.....	late milk	3.7	15.5
Salzer's N. Dakota.....	firm dough	3.8	13.2
Compton's Early.....	ripe	3.6	13.2

POTATOES.			
Variety.	Table Quality.	Marketable per cent.	Yield. Bush.
Empire State.....	100	94	367.8
Pearl of Savoy.....	96	91	339.7
American Wonder.....	88	92	316.4
Tonhocks.....	76	80	268
Irish Daisy.....	57	84	266.6
Burpee's Extra Early.....	89	84	266.2

TURNIPS.		
Variety.	Average Weight.	Bush. per Acre.
Jersey Navet (fall).....	2.5	1,098
Purple-top Munich (fall).....	2.13	939
Buckby's Giant (swede).....	2.09	882
Harley's Bronze-top (swede).....	2.03	874
Carter's Elephant (swede).....	2.02	863

MANGELS.		
Variety.	Average Weight.	Bush. per Acre.
Evans' Improved Mammoth Long Red.....	1.477	1,477
Simmer's Mammoth Prize Long Red.....	1.352	1,352
Carter's Warden Prize Orange Globe.....	1.069	1,069
White Silesian Sug. Beet.....	1.004	1,004

CARROTS.		
Variety.	Average Weight.	Bush. per Acre.
Pearce's Half-long White.....	987	987
Large White Belgian.....	907	907
Large White Vosges.....	808	808
Mitchell's Perfected.....	763	763
Guerranda.....	697	697

Dominion Experimental Farms.

The following are the figures showing the results obtained from uniform trial plots of grain and fodder corn on the Experimental Farms of the different Provinces under the supervision of Director Prof. Wm. Saunders, LL. D., F. R. S. C., etc.

OATS.

Table showing yield of several experimental farms for Oats. Columns include Name of Variety, Ottawa, Ont., Nappan, N.S., Brandon, Man., Indian Head, N.W.T., Agassiz, B.C., and Average of all Farms. Varieties listed include Banner, Golden Beauty, American Triumph, etc.

TWO-ROWED BARLEY.

Table showing yield of several experimental farms for Two-Rowed Barley. Columns include Name of Variety, Ottawa, Ont., Nappan, N.S., Brandon, Man., Indian Head, N.W.T., Agassiz, B.C., and Average of all Farms. Varieties listed include Bolton, Newton, Danish Chevalier, etc.

SIX-ROWED BARLEY.

Table showing yield of several experimental farms for Six-Rowed Barley. Columns include Name of Variety, Ottawa, Ont., Nappan, N.S., Brandon, Man., Indian Head, N.W.T., Agassiz, B.C., and Average of all Farms. Varieties listed include Odessa, Royal, Champion, etc.

SPRING WHEAT.

Table showing yield of several experimental farms for Spring Wheat. Columns include Name of Variety, Ottawa, Ont., Nappan, N.S., Brandon, Man., Indian Head, N.W.T., Agassiz, B.C., and Average of all Farms. Varieties listed include Hungarian, Preston, Stanley, etc.

PEAS.

Table showing yield of several experimental farms for Peas. Columns include Name of Variety, Ottawa, Ont., Nappan, N.S., Brandon, Man., Indian Head, N.W.T., Agassiz, B.C., and Average of all Farms. Varieties listed include Creeper, Canadian Beauty, Agnes, etc.

INDIAN CORN GROWN IN ROWS.

Table showing yield of several experimental farms for Indian Corn grown in rows. Columns include Name of Variety, Ottawa, Ont., Nappan, N.S., Brandon, Man., Indian Head, N.W.T., Agassiz, B.C., and Average of all Farms. Varieties listed include Pride of the North, Leaning Tower, etc.

OUR INQUIRIES.

To the following questions sent out to a number of representative farmers we have received replies given below and in the following issue:

- 1.-What estimate do you place upon the careful selection and cleaning of seed grain? Kindly outline your method.
2.-How do you prepare fall-plowed ground for spring seeding? Mention the sort of cultivator preferred - straight tooth, disc, spade, spring tooth, broad tooth, etc. - giving reasons for your choice; also, refer to harrowing and rolling before and after seeding.
3.-Which do you prefer, drilling or broadcasting seed, and why?
4.-Following what crops do you secure the best yields of peas? How do you prepare the ground and how do you manage to escape the bug?
5.-Outline what you consider the best method of securing a catch of clover and grass seed.
6.-Have you had any experience with lucern and orchard grass; if so, kindly give your impression of either or both for pasture, soiling, hay, or for improving the soil?
7.-What variety of oats, barley, peas, and spring wheat do you find give the most general satisfaction?

Places a High Estimate on Clean Seed.

1.-Too high an estimate cannot be placed upon the careful selection and cleaning of seed grain. So much depends on the land, some varieties doing much better on one kind of soil than on another. As a rule I think long-strawed varieties do best on light and shorter strawed on rich, heavy land. Early varieties on the latter often escape rust. It is a good plan to procure seed grown on heavy land for light, or vice versa. The published reports of the Experimental Farms should be read carefully. In course of time all kinds of grain are apt to deteriorate; when this is first noticeable it is time to select a new variety. Good seed grain should possess these qualifications: Large yield, good quality, stiff straw, and freedom from rust, smut, and foul seeds. As I make a specialty of raising grain for seed, I import it from different parts of the world and test it for two or three years, and if it does well I then dispose of it for seed. In cleaning I run it through the mill until it is quite clean and no light grains or foul seeds are left in it. The last time it is run through the mill I take all the riddles out and simply leave the grain board and a screen at the bottom in, turn fast, and open the blinds as much as the kind of grain being cleaned will allow. This will take out all light seeds and light grain and leave only good, plump grain for seed. Of course, if grain happens to be very dirty so that the mill will not separate it I would not sow it on any account.

2.-As soon as a crop has been taken off I gang plow as shallow as possible to allow my foul seeds to sprout, then later in the fall plow deep. On heavy land it is sometimes best to run a cultivator over wheat stubble, as a gang plow is apt to put some weeds, such as wild flax, too deep in the ground, and a little later on a gang plow. In the spring I cultivate the land until it is in good tilth, then drill in the grain and harrow immediately after. Some kinds of cultivators are best for heavy lands and others for light. A spring tooth answers well on the latter and a spade or broad tooth on the former. I have not had much experience with a disc, but know on heavy land if sod is plowed in the spring and a disc harrow run over it it makes a fine seed bed. One thing is very important and what I believe is rarely done, and that is to keep the cultivator teeth sharp. On light land I never roll until the grain is up some inches, with the exception of peas, which I roll right after they have been sown and harrowed. On heavy soil that is liable to bake I consider it best to roll before sowing, but much depends on the condition of the land.

3.-Drilling is better than sowing broadcast on light soil, as it puts the grain down deeper in the soil and it gets more moisture. On heavy land oats and barley seem to do well sown broadcast. If drilled in, the drill should be set to sow shallow. Peas on all land are best drilled in.

4.-After hay or pasture. A sod plowed in the spring, harrowed well, and the peas drilled in. I sow early in June to escape the bug.

5.-Prefer to sow timothy in the fall with wheat, and the clover in the spring on the wheat as soon as possible. Barley is the best spring crop to seed down with, the previous crop being roots, the land having been well manured for the latter. Might here add that I am a great advocate for green manuring, such as plowing down clover, etc. The more this is done the more likely we are to get a catch of seed.

6.-Have grown lucern on sandy ground and like it very much. It is very valuable for soiling, and makes good hay for all kinds of stock if cut at the right time, which is just when it is coming out in flower; if left too late it becomes woody. It makes good pasture, but does not want to be eaten down too close so as to injure the crown. I consider it one of the best crops to grow for improving the soil, as it draws nitrogen from the atmosphere and its roots penetrate deep down into the subsoil. Have only had a little experience with orchard grass. It grows very quickly and ripens much earlier than timothy, therefore the two should not be sown together for "hay." I sowed it with timothy and other grasses for pasture, and the first year cut it for hay. I cut it when the timothy was ready; the consequence was the orchard grass was overripe and wiry and the stock would not eat it. It ripens about the same time as red clover. As it grows in tufts it is better sown in mixtures. It is very valuable in a mixture, as it comes on so early.

7.-The last few years Challenge (white) and Black Tartarian seem to have given the best satisfaction in oats, but last year the former had a considerable amount of smut in it; the drawback to the latter is its tendency to rust. I grew two new kinds which I imported two years ago from Eng-

land, where they were then introduced for the first time, viz., the white oat, Newmarket, and the Golden Tartarian. The former is a heavy, plump oat, very early, stiff straw, and grand yielder. The latter is a long oat, resembling the Black Tartarian, but golden in color, a better yielder, and noted for its exceedingly stiff straw. The Scotch and common six-rowed barley seem to be the most popular. The two-rowed is very little grown here now. Peas - small white field, Multiplier, and Marrowfat. I grew the Prussian Blue, and am well pleased with them. Very little spring wheat grown in this section of the country. It does not seem to do well now. J. E. RICHARDSON, Brant Co., Ont.

[TO BE CONTINUED.]

Mr. Macpherson's Pastures and Corn.

To the Editor FARMER'S ADVOCATE: In reply to your letter of inquiry re permanent pasture, I might say that the pastures that I grow from are not permanent, but set down for two years of meadow and then three years of pasture. This is done by seeding down after the second crop of corn, by sowing oats or barley, on the thin side, not over 1 1/2 to 2 bushels per acre. The seed is usually 10 lbs. timothy, 4 lbs. red clover, 3 lbs. Alsike, 2 lbs. white, 3 lbs. red top, and 3 lbs. June grass. This is sown after the grain and then well rolled. The first year's crop of hay is largely clover. After the crop is harvested, during the month of August, this is top dressed with 12 to 15 tons of well-preserved stable manure, having ample cut straw to absorb the liquid. This dressing causes in all cases a vigorous growth, and is allowed to grow free from any beast to graze on until late in the fall. After this grass grows up it covers over the manure, and thereby holds the fall dews and showers sufficient to completely rot the manure without fermentation. It is thereby settled close on to the ground and becomes soil within one year. The roots of the grass in this way are stimulated to vigorous growth in the soil and protected from the severe frost at the same time. The following year a full crop of timothy, red top, June grass and white clover hay is cut late in June. With this treatment an assured crop of two to four tons is always cut, and by cutting this early in the season, with such vigorous roots developed by favorable conditions, and the surface of the soil enriched by well-rotted stable manure, a very large and vigorous growth of pasture grass is thereby established when pastured by cattle for fully three years. I might here say that a fair comparative estimate of the milk-producing value of pasture can easily be obtained by an estimate of the amount of hay a pasture plot would produce if left to be made into hay. One pound of hay made into hay in this way would, if pastured and made into milk, make one pound of milk; hence, an acre of pasture which would produce 1,000 lbs. of hay would produce 1,000 lbs. of milk, and an acre of pasture producing 4,000 to 5,000 lbs. of hay would in the same way produce 5,000 lbs. of milk. This, of course, is a basis of calculation, and from carefully observed experiment and calculation this estimate is a fair one. The tendency is that owing to the increased labor which cattle have to expend in securing their forage on sparse pasture, a milk cow would scarcely give 1,000 lbs. of milk on poor pasture estimated to give in hay only 1,000 lbs., the same cow or cows would give over 5,000 lbs. of milk from pasture calculated to give 5,000 lbs. of hay per acre.

Corn. - The ensilage corn which I have found to do best on very rich soil and give the largest and richest amount of feed per acre is the Mammoth Sugar. The next best is Cloud's Yellow dent and Mammoth Cuban. The advantages of the Mammoth Sugar are quantity and quality and condition; in very rich soil over 40 tons per acre can be raised. The stalks should be grown three to four inches apart in the row, and the rows 34 to 36 inches apart. Stalks nine to ten feet high will grow, having one, two and three developed ears; matures early and makes the best of ensilage for milk or beef. Cloud's Early Yellow dent and Mammoth Cuban will, under similar favorable circumstances, produce about the same amount of feed per acre. Sod land intended for corn should only be plowed in the spring, and only just before planting time. Stubble land should be plowed in both fall and spring. The reason that corn sod land should only be plowed in the spring and just before planting time is that the corn needs warm, open soil; and when the sod is turned down full of green grass it at once starts fermentation, and the large quantity of air in the interstices of the furrows leaves the most favorable conditions of warmth and openness. Corn planted under these conditions will usually give ten to twenty per cent. larger yield per acre and of better quality, as it will grow faster, more regular, and mature better. The best stage of growth for ensilage corn to be harvested is when the grain is full formed on the ears, and is in good "boiling-corn" condition. The further maturing of corn than this tends to make it more indigestible, and much of the nourishing parts of the grain pass through the cattle undigested. Glengarry Co., Ont. D. M. MACPHERSON.

The Best Farm Paper.

JAMES McCRAE, Simcoe Co., Ont., in a business letter under date of January 21st, 1897, writes: "I am much pleased with the FARMER'S ADVOCATE. I would not like to do without it. It is the best farmer's paper I know of." Also sends names of several new subscribers.

Prepara... On n... teams... cheaply... necessa... doubt... and go... withst... crop i... ticabl... them a... tion of... working... Up t... the tea... a few r... quarts... keep a... a little... comfort... up pro... objects... like to... within... been fa... tolerab... evening... added... proved... bran sh... of whe... flax ev... Instead... be used... rapidly... each, fe... hons... increas... three g... hard w... period... the tea... would e... creasin... the ne... The am... pond... work v... quarts... at night... than 5... It is no... the mo... work u... more... fore hi... full dri... or nece... feeding... If a... his coa... which... and als... teams... should... harness... a year... taken... water w... harness... quantiti... should... the har... black v... especia... horse t... vent sh... faced v... and fir... give be... and br... the ho... especia... and wa... should... drying... lotion... add a b... of lead... with th... hear in... In o... work, i... jects in... needs, c... ular, p... critica... March... than th... Oxy... air, is... small... pure o... were p... pheric... breath... system... compo... climat... warmt... so, as f... made f... ters oc... expire

**Preparing Farm Horses for Spring Work.**

On most farms where there is little work for the teams in the winter, they are usually boarded cheaply up till early in March, when it is considered necessary to feed them up for spring work. No doubt the team that is kept hard by steady labor and good feeding all winter will be in best form to withstand the two or three weeks of rush until the crop is all in. But as mentioned, this is not practicable on all farms. It is, therefore, wise to have them at the beginning of seeding as near the condition of health and physical stability of the steady working team as can well be obtained.

Up till the beginning of March we will suppose the teams have been fed on good oat and pea straw, a few roots or ensilage, and perhaps a couple of quarts daily of oats and bran. Such a ration should keep an idle horse in good health, and even gaining a little if allowed reasonable exercise, care, and comfortable quarters. To commence the feeding-up process, thriftiness would be one of the first objects sought by a good horseman, who invariably like to see the old coat commencing to shell off within a couple of weeks. If roots have been fairly liberally fed the system will be tolerably laxative, but a light feed every evening of boiled oats, with a little flax added, will soon show its effects in the improved condition of the skin. With this bran should be fed, and if a small quantity of wheat were boiled with the oats and flax even better results would be obtained. Instead of the straw, good hay could well be used. The grain ration should not be rapidly increased; a half-gallon of ground oats, fed with chaff morning and noon for each horse, would do well for the first week, increased gradually until they are getting three gallons of grain per day by the time hard work commences. During this fitting period a good horseman would not keep the team standing idle in the stable, but would endeavor to give it regular work, increasing as the month passes, so as to have the newly-built muscles firm and strong. The amount of grain recommended a 1,400-pound horse should receive while at hard work varies, but we would place it at five quarts in the morning, five at noon, and six at night. Teams should be fed not later than 5 o'clock a. m., after being watered. It is not well to allow a heavy feed of hay in the morning or at noon, or the horses will work uncomfortably for the first hour or more. A mouthful of water again just before hitching up cannot be harmful, but a full drink at that time should not be allowed or necessary, if they have been given a drink before feeding.

If a horse with good grooming daily fails to shed his coat before seeding time he should be clipped, which will add much to his usefulness and comfort, and also the comfort of the teamster. While the teams are being prepared for work, the harness should also receive attention. Every set of team harness should be thoroughly cleaned at least once a year, and oftener would be better. It should be taken apart and thoroughly washed in warm soft water with soap, and after drying be well oiled with harness oil, which may be made by adding a small quantity of lamp black to neat's-foot oil. This should be well rubbed and dried in before putting the harness together. A little clean oil without the black will do well for the lines. The harness, especially the collars, should be made to fit the horse that is to wear it to insure comfort and prevent shoulder, neck, back and other galls. Collars faced with regular cotton collar-facing, smoothly and firmly stuffed so as to fit the shoulders, usually give best satisfaction, as they can be dried, beaten, and brushed each morning before being put on to the horse. Some practice washing the shoulders, especially of colts, each night after work with salt and water. This tends to toughen the skin. If the shoulders feel hot after work, after washing and drying they should be given an application of white lotion, made as follows: To a quart bottle of water add a half ounce each of sulphate of zinc and sugar of lead. This should be well shaken and applied with the hand. This will remove inflammation and heal irritation and wounds.

In conclusion, we would say in fitting horses for work, as in every other undertaking, study the objects in view. It is not flabby fat that a team needs, but a good condition of flesh, mostly muscular, good healthful vigor, and feeling. We invite criticisms or suggestions on this important topic for March 15th issue, which should reach us not later than the 10th inst.

**Ventilation for Live Stock.**

Oxygen gas, one of the chief constituents of pure air, is essential to the support of animal life. A small animal confined in a bell-glass containing pure oxygen will not be suffocated as soon as if it were placed in the same glass filled with atmospheric air. The great objects of respiration, or breathing, are first to introduce oxygen into the system, and secondly the removal of such noxious compounds as carbonic acid gas. While in a cold climate the comfort of housed animals by means of warmth is very important, it is equally if not more so, as far as health is concerned, that provision be made for a constant renewal of the air in the quarters occupied by live stock. Over 4 per cent. of the expired air is carbonic acid gas—a poison—which

tends to arrest the vital processes. Success in live stock rearing depends, as in other lines of business, upon proper attention to details, and a supply of pure air in a modern stable is one of these. Of all live stock quarters probably those most reeking with visible filth and veritable hotbeds of bovine tuberculosis yet discovered have been the cow byres from which the milk supply of some of the older and larger cities, such as those in the Eastern States, have been drawn, and above all others these should be clean and pure.

By means of the law of the diffusion of gases and the rise of the heated breath and air from the animals' bodies, we are enabled to provide a reasonably good supply of pure air, so essential to the health and thrift of dairy, fattening, and other stock. Mr. W. S. Hawkshaw, the well-known breeder, of Glanworth, Ont., in reconstructing his stables last season put in a system of ventilation devised by Mr. Issac Usher, of Thorold, consisting of a large pipe or tile leading from the outside, below ground, down the feed alley, with smaller lateral pipes to the mangers. In this way a constant supply of pure air flows in as the heated, impure air

ing to the feed room in the basement. At the time of our visit, early in February, the silage, although somewhat acid on account of being put in somewhat green, was being fed with good satisfaction.

**Sallient Points in Round Silo Construction.**

It may interest some of the readers of the ADVOCATE to know that in building a round silo it is not necessary to have the staves the full length. It is a great waste of valuable timber to cut plank twenty feet long. I built mine with good sound one and a quarter pine flooring, twelve and sixteen feet long, dressed and matched, with the edges made the proper bevel at the factory. Silo is ten feet in diameter, twenty-four feet deep. When building it I broke the joints, same as in laying a floor. At each joint I ripped half an inch in the end of each board and set in a piece of inch hoop-iron, dipped in paint. A. MCKENZIE, Wellington Co., Ont.

**Improving Land Without Manuring.**

To the Editor FARMER'S ADVOCATE:

SIR,—On page 81 of February 15th issue you invite experience from readers of the ADVOCATE, "How to improve the soil without manure." I would change our Quebec friend's plan somewhat. Plow the land 5 inches deep and subsoil 8 inches; harrow thoroughly before sowing; sow spring rye, 1½ bushels per acre, with a seed drill, and at the same time sow 12 lbs. Mammoth red or pea-vine clover per acre; allow the clover to drop behind the coulters of the seed drill; pass a very light harrow or a Breed weeder over the land, and roll immediately after sowing. Too much stress cannot be laid on harrowing and rolling as soon as the seed is sown. The spring rye can be cut several times during the season for either a mulch or feeding. If the season is anyway favorable, the clover will grow to a good height for plowing under in autumn. I would prefer to leave the plowing until May, so that the clover would have made a good growth in spring. Sow the gypsum before sowing the grain. I would have some doubt about our Quebec friend's plan being a success.

1. The buckwheat would smother the clover.
2. The winter rye will not do as well as the spring rye when sown in spring.
3. Twelve pounds clover will make a perfect mat when sown early in spring, and sown as directed. J. FIXTER, Farm Foreman, Central Experimental Farm.

**Maple Syrup.**

BY JOSEPH YUILL.

As the time of year for making maple syrup will soon be here, a brief description of modern methods of its manufacture as practiced by the writer may be considered opportune.

The first thing is to have everything prepared in autumn if possible. Have a house 15 x 32 ft., 8 ft. posts, single boarded and battened. Have this house situated in a convenient place; if possible, on a sidehill; have a ventilated roof on one half of the house—the half over the evaporator—to allow the steam to escape. Have the other half of the house full of dry, light wood.

The first thing is to tap the trees. The way to know when to tap is to tap a tree facing to the south. As soon as the sap flows freely from this tree it is time to tap. This generally occurs the last week of March or first week of April. When the time arrives to tap be supplied with a sheep-skin with the wool on it to have under your knees; a light hand axe to dress off the rough bark; a common carpenter's brace and a half-inch bit. With this bit bore a hole in the tree one inch deep. It will greatly facilitate operations if two men go tapping. One man goes ahead, trims off the bark and bores the hole, and another man follows and places the spout in position and hangs on the buckets. There are a great many different kinds of spouts in the market, but I find the spout with a thread on it to screw into the tree gives the best satisfaction. Have a wrench fitted into a common brace; with this power the spout is easily screwed into the tree and there is no trouble about sap leaking past the spout. The spout is provided with a wire hook on which to hang the bucket. The size of the bucket requires to be in proportion to the size of the sugar bush. If you have a small bush, say two hundred trees, so you can get around it twice each day to empty the buckets, buckets holding six quarts will give the best satisfaction, they are so light and easily handled; but if you tap more trees than you can get around conveniently twice a day, you are better with buckets holding eight quarts, and have them made of the best tin. The best will be found to be the cheapest.

Next comes gathering the sap, and there are a great many devices for gathering sap. A large barrel placed on its side on a sleigh and a filler to fill the sap into the barrel, and a piece of three-inch hose. If the sugar house is on a sidehill this piece of hose will run the sap into the feed trough, but if there is any ice on the sap this way of gathering will not give satisfaction. The way we gather sap is as follows: We have a pair of light sloops with a narrow rack and have four barrels holding twenty pails each. Take one end out of each barrel and stand the barrels on end; the object of having the barrels on end is if there is

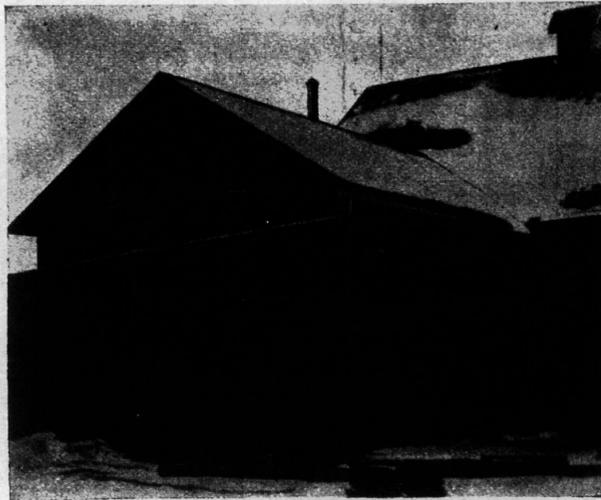


FIG. I.—MR. J. A. JAMES' CEMENT CONCRETE TWIN SILOS.

rises and escapes through the feed chutes or other means of exit. Mr. Hawkshaw's basement is 51x65 feet, and he is more than satisfied with his winter's experience. Night and day, the temperature of the stable has ranged about 49 to 50 degrees. On winter afternoons when the stock were all out and doors open it would drop down to 45, but rise soon after they were in again to about 50. There was no dampness and the air always seemed beautifully pure and sweet. His animals never seemed to thrive better. By keeping a thermometer in the stable he took frequent note of the temperature and so can vouch for the accuracy of his statements.

**Double Cement Concrete Silo.**

The photo-engraving (Fig. I.) reproduced on this page represents the twin cement concrete silos on the dairy farm of Mr. J. A. James, Middlesex Co., Ont. The silos extend southward from the barn, beneath which is a stone basement for stock. The center partition divides it into east and west compartments, each of which is 20 ft. by 9 ft. 3 in., by 22 ft. deep, inside measurement, as shown in Fig. II.

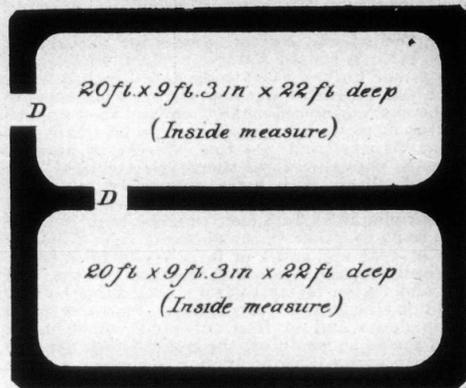


FIG. II.—GROUND PLAN.

The walls are 18 inches thick at the bottom and 12 inches at the top, the partition wall being heavier, 14 inches at the top, although less would have done. The concrete was mixed one part Queenston cement to six parts sharp, coarse gravel, and about one-third the whole bulk in stones was bedded in. The bottom is also of cement concrete. Fig. II. represents the ground plan, which shows the corners round to insure no wasted ensilage in them. The end door (D) at north end opens into the chute lead-

any ice on the sap the barrels on end is the most convenient way of handling it. If there is no ice on the sap we have a strainer on each barrel, composed of a piece of strong linen, with a float in each barrel. Have a tank at the sugar house large enough to hold a load of sap. As soon as the load comes in it is emptied into the tank. The team goes out for another load and one man attends to the fire and dips the sap up into the feed trough before the next load comes in. A strainer made of grey cotton is hung in the feed trough and the sap passes through it as it is dipped into the feed trough.

Next comes the boiling. We use a modern evaporator, 14 feet long and 40 inches wide, with a corrugated bottom, so that the cold sap passes from the feed trough through an automatic regulator which regulates the depth of the sap in the evaporator. This automatic regulator is placed at the front of the evaporator. The sap passes backwards and forwards across the evaporator, and by the time it gets to the back end of the evaporator it is into syrup. The thickness of this syrup is regulated by a tap in the back end of the evaporator.

When the syrup is ready for draining off open the tap enough to allow the syrup to run off slowly, just so that the cold sap will be running in at one end and running out syrup at the other end. This syrup should pass through two thicknesses of flannel cloth and be allowed to settle for twelve hours.

We have a galvanized pan thirty inches square and twelve inches deep to finish the syrup in. When the syrup has settled for not less than twelve hours, pour it over carefully into the finishing pan. Be careful not to allow any of the sediment which has settled to the bottom to pass into the pan. Have a stove in the sugar house and a strong stand, as large as the pan and the same height as the stove set on casters. When the syrup is ready set this stand close to the stove. One person can easily move the pan of syrup on to the stand and move it back from the stove.

When the syrup is poured into the pan after being settled, and while it is yet cold, add one quart of sweet skim milk to every four gallons of syrup. Allow it to simmer slowly for a few minutes. The action of the milk on the syrup will have the effect of raising the skim to the surface. This is removed with a skimmer. The purity of the finished article depends greatly on the perfection with which this part of the process of purifying is performed. Boil until it is thick enough. The way to know when it is boiled enough is: When the syrup is allowed to drop off the dipper, when the drops hang to the dipper until they are so large that they reach right across the front of the dipper and stick to it.

[Many successful syrup makers use a saccharometer. This involves putting syrup in a narrow pail, but we find it very uniform and accurate—ED.] If it is not boiled to this stage the chances are that it will sour when the hot weather comes, and if it is boiled past that stage it will be very apt to go to candy.

When you have it boiled to that stage strain it through a flannel cloth while it is boiling hot, for if it gets cool it will not go through the strainer. It is now ready for market, and a very good way to market it is in one gallon cans. They can be made of cheap tin, and do not come very expensive. What we require for our own use we put up in three-gallon cans and keep in a cool place. We use about sixty gallons every year and have no trouble keeping it in good shape until the new crop is ready. We have no trouble disposing of all our surplus syrup at \$1 per gallon.

It is needless to say that the first and most essential part of sugarmaking is cleanliness in all its details, and if this is not observed a poor article of syrup will be the result.

The greatest drawback to the sugar business is the amount of adulteration practiced. We often see it exposed for sale on our markets with very little, if any, sap of the maple tree in it.

**Wants Information re Soiling.**

In renewing, I wish to state that I am much pleased with the *ADVOCATE* and think every number better than the preceding one. The last number (Jan. 15) contains a vast amount of useful information. Although I may not be classed amongst the successful farmers, yet I have been experimenting to find the best mode of saving and applying manure, and I find that putting the horse manure in the cow stables every day and hauling from cow stables every other day and spreading on the land intended for roots is by far the best mode I have tried yet. As long as the snow is not too deep or the ground too soft this plan cannot be improved on. Manure from box stalls is not as good as cow and horse manure mixed, as it can not be spread evenly and dries out much faster in the spring. Cut straw goes farther than long, and where straw is scarce will pay to cut, especially if one has a power mill to drive the cutting box.

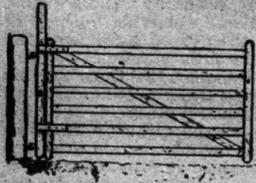
I would like if you could publish experiences from those who practice partial or total soiling, especially the latter. I intend to try the system and would be much pleased to have some advice from those who have tried. If you do not think it would be in the interest of the public generally to publish, would like if you could furnish me with the address of some parties who practice soiling.

Huron Co., Ont. J. N. KERNIGHAN.

[NOTE.—Will those who have practiced total soiling give their experience and methods through the *ADVOCATE*.—ED.]

**THE HELPING HAND.**

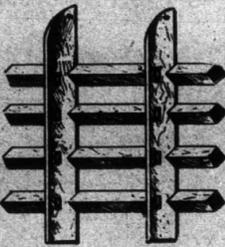
**An Adjustable Gate.**



J. ARTHUR VANCE, Durham Co., Ont.:

“The above represents a gate which every farmer should have. It is especially valuable in the winter to raise it up out of the way of snow, but can also be used with advantage in summer to allow sheep or pigs to run under when cattle or horses are desired to be kept back. Standard B is attached to the post by hinges. The gate is made separate from the standard B and held to it by two iron straps of flat iron on the top and fifth bars. It fits around B loosely so that the gate can be raised or lowered easily. In standard B are a number of holes about six inches apart from the top of the standard downwards. These are to receive a bolt immediately beneath the top strap to hold it up. This gate is, I think, much handier than the one shown in Jan. 15th issue.”

**Combined Sled and Land Leveler.**



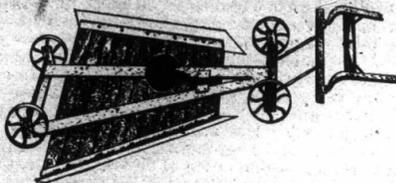
D. P. L. CAMPBELL, Prescott Co., Ont.:

“The above illustration represents an improved land leveler and sled combined, which makes an excellent land leveler and by turning upside down it becomes a sled, on which harrows, seed grain, etc., can be conveyed from one field to another.”

“Take four scantling, pieces seven or eight feet long and four inches square. The runners are made of two-inch plank, seven inches wide and four and a half feet long; one end being rounded like a runner and a hole bored through it, to which to attach a chain to draw the implement.”

“Mortises are made through the runners, two inches from the bottom, in which to place the nuts on the bolts used to secure them to the scantling. Use half-inch bolts, seven inches long. As one corner becomes worn the scantling can be turned, and this repeated until the four angles are worn off. The diagram renders further explanation unnecessary.”

**Homemade Corn Harvester.**



J. F., Brant Co., Ont.:

“The accompanying sketch may seem out of season, but the winter is not only the proper time to construct but to put all farm implements in repair. With very little expense and trouble a corn harvester like the accompanying representation can be constructed by any person reasonably handy with tools. Our harvester has worked well. We cut heavy Western as well as our native corn, three men cutting from six to seven acres per day without any trouble, laying it in convenient bunches for drawing to the silo or to shock. We seemed to take off our twenty-two acres as easily as four or five in the old way and the work equally well done. The expense is for the wheels, knives, braces for the shafts, axles, etc. We used old gang plow wheels and bean puller knives 4 feet long and 6 inches wide, which can be got of the manufacturer as cheaply as a blacksmith would make them and they answer a better purpose, being made of special quality of steel. To construct use four wheels as near 12 inches as possible; fit to them axle two feet long inside of wheels, with holes to lower or raise platform as described in cut. The frame is made of two oak planks 2 x 6 x 5 feet 6 inches long. Dress them to fit together in the shape of a V, 22 inches wide at rear end and 4 or 5 inches wide in front, with bolt through nose. Bolt the frame to the hind axle and fasten frame to front with king bolt so the front wheels will turn freely. Turn the frame upside down and in front of hind wheel nail a board across squarely on the frame 4 feet 3 inches long with wire nails long enough to clinch. Cramp the front wheels, and as close as possible without interfering with the front wheels fasten a board 2 feet 3 inches long. Fill in between the front and rear board with lumber (matched lumber makes the best platform). Trim the platform with straight edge and saw to 2 feet 3 inches in front to 4 feet 3 inches at the rear, having each corner of platform equal distances from center of axles. Draw a line 3 inches from edge of platform and level toward the edge, dressing with plane so knives will fit. This bevel throws the edge of the knives upward, making an easier and cleaner cut than if the knives were flat. Now turn the harvester over, put 1/2 in.

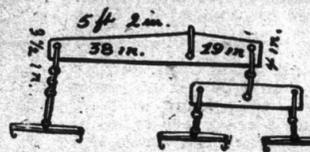
board 6 in. wide lengthwise over where the knives go, beveling the edge so as to fit without any projection or raise to catch the butts of the corn as it comes from the knives; then bolt the knives on the lower side of platform, letting the knives project outside of platform from 1 1/2 to 2 1/2 inches. A mowing machine seat and spring form the driver's seat. The rear seat should be nearly level with the platform; a bag with a little straw or a buggy cushion answers well; then every leaning stalk or sucker can be picked up and dropped behind in bunches. The shafts can be attached with hooks and eyes in axle or bolted to axle, then when not in use they can easily be laid away, but the shafts should fit the horse closely and not extend farther forward than the collar of the horse, otherwise they would catch the corn and pull it down. Use part of an old bag for horse's nose to keep him from eating the corn. The above measurements are for cutting corn from 3 feet to 3 1/2 feet. If wider or narrower rows are to be cut the platform should be made that much wider or narrower. To harvest successfully the machine must go the same direction the corn was cultivated the last time. With a machine like this a boy, two good men, and a steady horse, the knives kept sharp with a file every few rounds, solve the difficult problem of harvesting corn.”

**“A Stitch in Time Saves Nine.”**

JIMMY DACK, Muskoka, Ont.:

“Every one will agree that this maxim is as true as it is old. However, I suppose every one of us loses more or less every day by neglecting to practice it. Perhaps we work with dull tools, when a few minutes spent in sharpening them would save hours in the course of a day or two. Maybe we put off nailing a board on the garden fence until the old sow gets in and does a lot of damage. Sometimes it is something more serious. A few months ago I witnessed the loss of a fine heifer, which was so badly hurt with a grain cradle that she had to be killed. The cradle was left on a pile of straw instead of being hung up in its place.”

**Three-Horse Whiffletree.**



ARTHUR BEER, Wentworth Co., Ont.:

“The above illustration of three-horse whiffletree explains itself. I consider it better than the one represented in Feb. 1st issue, because it requires just one piece more than the ordinary whiffletree.”

**DAIRY.**

**The Ontario Agricultural College Dairy School.**

A few hours were spent some three weeks ago by a member of our staff at the Dairy School of the Ontario Agricultural College at Guelph, which was then and is yet in full operation, having some sixty students in attendance. We were disappointed upon entering to find no ladies among the white brigade, who, even without the refining influence of the absent class, seemed eagerly and quietly seeking out the hidden mysteries of the dairy business by the search-light of science and modern equipment, without which no country, however adaptable, is able to stay in the race, to say nothing of winning in the contest for the world's markets for butter and cheese. It is indeed a pleasure to spend some time with Prof. Dean and his staff, each of whom exhibit the utmost pleasure in acquainting visitors with the ins and outs of the intricate operations, which after all become quite simple when understood. We mentioned sixty students in attendance. Can that number possibly represent the number of would-be dairymen in the central portion of our Province who need the advantages afforded at this school, which belongs to the farmers of this country?

The new dairy building is divided into separating and buttermaking room, testing room, lecture rooms, dressing rooms, and the offices. The lecture rooms are supplied with the best dairy and agricultural papers published in Canada, the United States, and England. In the old dairy building is the home dairy department, the cheesemaking room, and the engine and boilers for supplying the steam, heat and power. The general cleanliness, tidiness, order and system observed in every department, together with the snowy whiteness of the costumes of instructors and students, impresses one on entering with the suitability of such where refined food products are being manufactured.

The students taking the full course of cheesemaking and buttermaking, separators, and milk testing (41) change every three days, thus going once around in twelve days. Home dairy students (7) remain in that department all the time, except they prefer instruction in cheesemaking, which they take as desired. There are also classes of specialists who take either milk-testing and cheesemaking (5), or separators, buttermaking, and milk testing (7). These divide their time as they desire.

The Buttermaking is in charge of Mr. T. C. Rodgers, assisted by J. H. Findlay. The milk (4,000 to 5,000 pounds daily) when received is weighed in by the assistant buttermaker, assisted by students,

and entered upon a sheet along with a report of its condition, which affords both students and patrons object lessons in observing and detecting bad flavor, etc. A composite test is made of each patron's milk by placing one ounce in his bottle each day. It is preserved sweet two weeks by the addition of a small quantity of corrosive sublimate and bichromate of potash one to seven parts. The milk is all paid for by pounds of butter-fat. The milk then enters the heating vat, and is raised to the temperature of 95 degrees, when it is run through the separators, viz.: Russian, United States, Alpha, Alexandra, and Danish Weston. Mr. Mark Sprague has charge of the separating. A large quantity of the milk is run through each separator twice a week to illustrate factory work. The skim milk is heated by steam to 160 degrees before being taken home by the patrons, in order to prevent its souring readily.

**The Pasteurizing Process** is comparatively new in this country, but Mr. Rodgers employs a simple process, by means of which many bad germs and bad flavors are killed and driven off. Even the turnip flavor, which is very prevalent in the milk received, is entirely eradicated. The cream after separated is placed in shotgun cans, or deep pails, and set into a tank of boiling water. The cream is kept constantly stirred until it reaches a temperature of 160 degrees, when the cans are lifted out and allowed to stand on the floor for twenty minutes. It is then poured into the cooling and ripening vat, 12 inches wide, 17 inches deep, and 5 feet long, surrounded by a water jacket of about 7 inches. This vat is represented in the very foreground of the illustration. When cooled to 95 degrees, which takes about one hour, from 10 to 15 per cent. of pasteurized skim milk starter is added. The cooling is continued until the cream is down to 85 degrees, at which it is held until ripe. It is then further cooled to 52 degrees, and churned the following morning, or 24 hours after being received from the patrons. Saturday's cream is ripened at a lower temperature and less starter added than on other days. In case we might forget later, we would mention just here, that everything in use that requires washing is thoroughly cleansed with steam.

**The Butter.**—After the cream is churned on an average of 40 minutes in a box churn, the butter is collected in little granules. At times it is salted in the churn, and at others on the worker. The greater part of the butter is sold in Toronto at 21 cents per pound. It is salted at the rate of  $\frac{1}{4}$  to  $\frac{1}{2}$  oz. per pound of butter.

**The Home Dairy department**, in charge of Mr. James Stonehouse, is conducted on precisely the same system as the larger creamery, only that everything is done on a much smaller scale, as suitable for the ordinary dairy farm; for instance, the separators and churns used are of small capacity, being run by hand; also, the butter-worker is of the hand-lever sort, instead of the revolving power-worker.

**The Testing Room**, in charge of Mr. J. W. Mitchell, is equipped with various sorts of Babcock testers, lactometers, lactoscopes, pioscopes, etc., which are used to determine the quality of milk as to fat and other solids. What seemed to be a modern tester is the Russian Babcock. It is encased in a heavy iron casing, and run on the turbine principle directly by steam, which serves the double purpose of producing power and also keeping the samples warm. It is so arranged as to admit of the hot water being added to the samples while at full speed. The test bottles have long, thin necks, and so graded as to indicate the amount of the merest trace of fat; for instance, in skim milk, whey or buttermilk. The students in this department learn, among other things, how to detect tampered milk by means of the tester and lactometer.

**The Cheese Department**, in charge of Mr. T. B. Millar, assisted by Mr. R. Stratton, is equipped with seven 300-pound vats, and all other necessary appliances, such as presses, tanks, etc. Two students

look after each vat. One is put in charge one day, assisted by the other, and *vice versa* the following day. A detailed report is made out for each vat, giving the pounds of milk, condition, per cent. of fat, amount of coloring, time in ripening, etc.—some 25 different items in all—useful as a record, and for comparison in tracing up a possible defect in the finished product.

**The Curing Room** presented the same order and sweetness that characterized all the other departments. The shelves, one above another, were laden with uniform cheese of about twenty-eight pounds each, which are found to suit the local market well, as January make was sold for 10.5 cents per pound. There were also seen a number of Edam and Gouda cheese of somewhat oval form made in the home dairy department. A number of square cheese are being made and sent to London, England, market, to ascertain their suitability for that market. The advantage of square cheese for export is the fact that there is no loss in space, as is the case with round cheese. The proper temperature and humidity, as indicated by the thermometer and hygrometer, are obtained in winter by a hot water radiator, having a shallow pan of water sitting upon it, together with good ventilation. In summer the room is kept cool by trays of ice placed on the upper shelves, when the moisture is increased by sprinkling the floor with water, and decreased by sprinkling it with lime. The best temperature is about 65 degrees, and best degree of humidity

subject declared that he believed better results would be obtained if no turnips were fed, and that they should, therefore, not be used. At the close of the discussion the following resolution was unanimously carried: "We, as patrons of the Thamesford cheese factory, pledge ourselves not to feed turnips to our cows while sending milk to the factory, and do authorize our directors to pass a by-law prohibiting the feeding of turnips to cows from which the milk is used for cheesemaking."

**The Makers' Convention.**

The Cheese and Butter Makers' convention to be held at the Dairy School, Guelph, Ont., on Friday, March 5th, referred to in last issue, promises to be a brilliant success. The programme which has been issued by Sec. J. W. Wheaton is made up of papers, addresses and discussions on the various phases of cheese and butter making. The afternoon session commences at 2 o'clock, and the evening at 7.30. Among the speakers are such men as Hon. John Dryden, Pres. Mills, Prof. Shuttleworth, Messrs A. T. Bell, A. Wenger, Geo. H. Barr, and many others, besides the instructors at the Guelph Dairy School.

**Reply to Prof. H. H. Dean on the Question of Milk Fat and Cheese Yield.**

To the Editor FARMER'S ADVOCATE:

Some of Prof. Dean's statements in a recent

issue of your paper are amazingly reckless, and it is more important that I call attention to the serious errors that he falls into than to devote much attention to his attempted criticism.

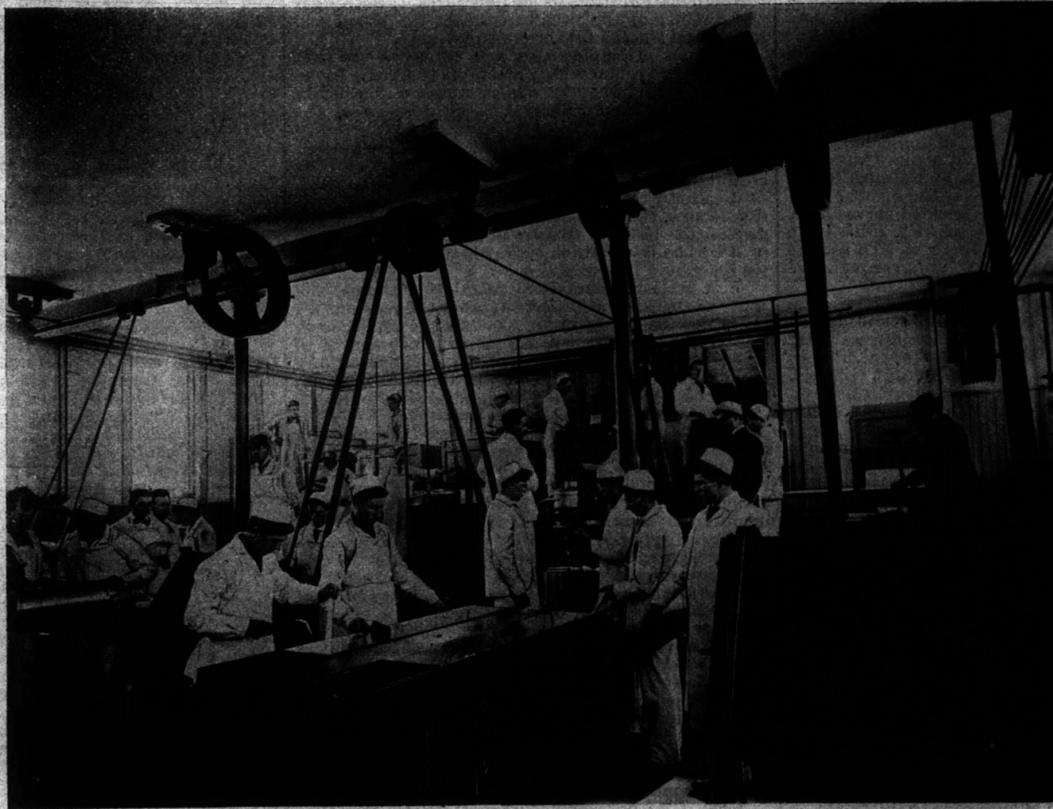
1st. He stands by the old, exploded claim that normal rich milk can not be made into cheese without greater proportionate loss of fat than milk poorer in fat, and says the Guelph station can furnish proof. Not less than five American experiment stations have shown that he is wrong. He had better discharge his cheesemaker and secure one who can save the fat. We can furnish him cheesemakers from the States in abundance who can do what he professes can not be done at Guelph.

2nd. In his 4th statement he badly confuses two different ideas, viz., (a) yield of cheese from 100 pounds of milk, and (b) yield of cheese for 1 pound of fat in milk; two things which are very different, and yet he takes them to mean one and the same thing. He

thus quotes me as saying things I never said or even dreamed of saying. He asks me to harmonize statements which were never otherwise than harmonious except in his confused understanding. The only way to harmonize under such circumstances is for him to get a clear understanding of things which are comparatively simple to an ordinarily careful reader.

3rd. Another one of Prof. Dean's marvellous statements is this: "The water found in cheese is different from the water which a man pumps from his well"; and then he goes on to speak of the "natural water of milk," "the natural water in roots and corn silage," etc. Will he kindly refer me to the work on chemistry which authorizes him to distinguish between different kinds of water in the way he does. The discovery may be so recent that I have not yet seen it in any chemical journal. Prof. Dean, in making such statements, clearly is out of his field, as no scientific man would for a moment put forward, in this offhand way, statements of such far-reaching importance without any shadow of foundation. So far as anybody knows, water has the same chemical composition wherever it is found, and there is absolutely no scientific justification for such utterly misleading statements as he makes. We suggest that he consult the Professor of Chemistry at Guelph, who will loan him some elementary text-book on chemistry for careful study before writing any more about "natural" water.

In reply to Prof. Dean's criticism as to inconsistencies found in Bulletins No. 68 and 110, so far as they have not already been explained, I would say that the results contained in 110 represent work



[Photographed for the FARMER'S ADVOCATE by J. F. Clark, B. S. A., Ontario Agricultural College, Guelph, Ont.]  
SEPARATING AND BUTTERMILKING ROOM, GUELPH DAIRY SCHOOL.

about 60, as indicated by the hygrometer.

**Lectures and Discussions.**—A regular course of lectures is also given by the different Professors of the College on various matters pertaining to dairying. One class-room is so arranged that a dairy cow is brought before the students, who receive instructions in judging, etc. During each afternoon, except Saturday, the whole class hold discussions on various practical topics in the cheesemaking room, led by one of the instructors. During the afternoon of our visit Mr. Millar led the discussion on cheesemaking, when the students asked questions freely on everything that was not quite plain. A couple of October cheese were brought forward, and samples passed around for each of the students to score. A uniform scale is adopted as follows: Flavor, 35 points; closeness, 20; even color, 15; texture, 20; finish, 10; total, 100 points. The first cheese scored: by Mr. Rodgers, 91; by Mr. Millar, 93; while the scores of the students ranged from 88 to 94 points. The scoring of the second cheese by Prof. Dean totalled 94 points, and most of the students were within a few points of this result.

**Turnips Must Go.**

At the annual meeting of the Thamesford cheese factory patrons one of the most live subjects discussed was that of feeding turnips to cows, the milk from which was being made into cheese. There was a full meeting, and although a number of them had always been in the habit of feeding a few turnips to their cows in the fall, every man that expressed himself at all on the

with individual herds of cows, and we therefore find some greater differences than in working with mixed factory milk which was used in 63. This fact is noticed in the introduction of 110.

Prof. Dean ignores or does not clearly understand what is meant by the term "skim milk difference" as used in No. 110. It is most important that dairymen should clearly understand the actual facts. To illustrate the point, I wish to call attention to the fact that cheese made from milk containing three per cent. of fat is usually different in composition from that made from milk containing four per cent. of fat. The former contains more casein and water in proportion to fat than the latter. Now, it must be allowed, as a fair procedure, that there can be no injustice in treating the richer milk in any practicable way that will change it into milk which will make cheese having the same composition as the poorer milk. This can be done by adding skim milk to the richer milk, and then it will make cheese almost absolutely in proportion to its fat, and the cheese will be exactly like that made from the poorer milk. Or, the same object can be accomplished by removing a certain amount of fat from the richer milk, when the resulting skim milk will make cheese just like the cheese made from poorer milk, containing three per cent. of fat. I am not to be understood, of course, as advocating in actual practice any such procedure, but I use this illustration to show that there is a difference in the composition of the cheese made from rich and poor milk and to point out what is the relation of the producer of rich milk to the producer of poor milk and how these relations can be adjusted. We say in reality, you may skim your milk or add skim milk, provided you make the cow produce it in the form of poor milk. On the other hand, we say, you must not take rich milk and make it like the poor milk produced by the cows, either by removing fat or adding skim milk, and yet if the richer milk were properly adjusted it would make the same kind of cheese as the poor milk, and almost in exact proportion to its fat. What is the result? The producer of poor milk has a decided advantage. The remedy for the producer of rich milk is to produce poor milk direct from the cow. This is the inevitable result of giving any unfair advantage to the producer of poor milk.

Prof. Dean is practically posing as the champion of the producer of poor milk. It is a standing disgrace to the majority of milk producers that they will allow a few producers of poor milk to prevent the payment of milk by its fat content. The objectors are the producers of poor milk, and they are taking advantage of Prof. Dean's position and citing him as authority that poor milk does not get its just deserts under the fat payment system. *The hope of better milk production lies in the adoption of the fat payment system.*

We will gladly send Bulletin No. 110 to those of your readers who desire to study full discussion of this important subject.  
L. L. VANSLYKE,  
Chemist of the New York Agricultural Experiment Station, Geneva, N. Y.

## APIARY.

### No. 2.—The Fundamental Principles of Bee-keeping and the Planter in Which Bees Work.

By A. E. HOSHAL, LINCOLN CO., ONT.

If I were given a class of beginners and told to instruct them into the mysteries of modern practical bee-keeping, if not the first, certainly one of the first lessons which I should give them would be to show them that there are certain definite lines along which a colony of bees always works, and that if we fail at the start to recognize this and to thoroughly understand it in its various bearings, neither will we afterwards be able to understand the science in hive construction and the various manipulations in connection with an apiary, and why and how certain results can be obtained through these.

From observations we learn that a colony of bees always begins to work at the top of its hive, and in continuing does so in a downward direction. A little of its honey will be stored about the sides of its brood nest, but the bulk of it will be stored above; in fact, this latter instinct so predominates that it is generally said that "bees always store their honey above their brood." For consumption they use that lowest down and next to the brood. In breeding, the upper part of the brood nest is kept immediately next to the honey, but when the upper brood hatches and the honey flow is sufficient the bees will then fill with honey the comb cells out of which it hatched, thus forcing the brood nest downward, but keeping the honey above it. From the above it will be noticed

(1) that bees continually work to keep connected their brood and honey; (2) that their manner of working always keeps the honey above and the brood immediately beneath it; (3) that they do not store honey above honey nor at a distance from their brood, but immediately next and above it; (4) that the hatching of brood about the upper part of the brood nest continually keeps creating a shallow empty space (empty comb) between the brood and honey, and, as a consequence, keeps stimulating the bees to constant activity through their instinct to keep connected the brood and honey.

These few observations as to how bees work by

no means cover the whole ground, but I mention them to give us a start and to indicate the line along which we should work if we are to be successful. By applying these we learn the following important and fundamental principles, which apply particularly to the art of hive construction and the summer management of our apiaries.

1. That surplus cases should be given above the brood nest, and hence our hives built for top storage.

2. That we should not compel our bees to travel over honey at the top of the brood nest to store surplus, and hence the division between the surplus apartment of our hives and the brood chamber should come right where the brood and honey meet; in other words, our hives and management should be such that there will be no honey, or as little as possible, at the top of the brood chamber when we wish our bees to store in the surplus cases above it.

3. That brood should extend under the whole surface of the surplus cases, hence these should not extend endwise nor sidewise beyond the brood chamber, neither should there be combs of honey beneath them at the sides of the brood chamber. Any of these conditions compel the bees to store their honey at a distance from their brood.

4. That when one or more surplus cases have been filled sufficiently to require the addition of another it should be placed right between the brood and honey already stored, and experiment proves true that the shallower the opening which we make between the brood and honey already stored, through the addition of surplus cases, the stronger the instinct of the bees to connect the brood and honey and thus to fill these empty cases.

5. From principles two and three we see that any hive or system which attempts to fill the brood chamber with honey for winter stores, either before or while the honey harvest is on, does so at the expense of those important conditions necessary to the development of the strongest honey gathering and storing instinct of our colonies, and accordingly lessens the amount gathered and stored.

6. A little reflection shows, and experience proves it true also, that the deeper the brood chamber the greater the liability to have honey stored at the top of it by the bees, which, according to principle two, we see would be a mistake.

7. A little mathematical calculation shows, too, that the deeper the brood chamber the less surface there can be above it for top storage, and, consequently, the deeper will the surplus cases have to be in order to have sufficient capacity, in adding which the deeper will be the opening made between the brood and honey; and this, according to principle four, we at once see is also a mistake.

8. It is a fact that when a brood chamber is larger than a queen can keep filled with brood the remaining space will be filled with honey, and it will be placed either at the side or top of the brood chamber. This also is evidently a mistake, but it is not uncommonly made. Thus I might go on enumerating principle after principle, but these point the way and will help us toward a correct understanding of considerable that is required in hive construction and the summer management of our bees. Summing up these principles which I have mentioned, they mean about this: Have the brood chamber filled with brood and devoid of honey whenever we wish the bees to store in the surplus cases above it, and use as shallow surplus cases as practicable and give them immediately next to and above the brood. The amount of brood developed depends largely upon the queen, but the amount of honey or brood about the top of the brood chamber upon the construction of our hives and their management.

Now, I do not wish it understood by this that we must never cross the instinct of our bees—it is often necessary if we are to accomplish certain desirable results. In hive construction movable frames, thick top bars, queen excluders, etc., are all examples of this, and a similar example in management would be when we prevent further expansion of the brood nest at that season of the year when the raising of large quantities of brood means the hatching of this brood into bees when the honey harvest is past, thus giving us large quantities of bees to be honey consumers instead of honey gatherers. We must learn to discriminate aright as to when we can with profit cross the instinct of our bees and when we cannot.

### Bees—Spring Management.

To the Editor FARMER'S ADVOCATE:

SIR,—I intended to send you a few lines on the management of bees in winter, but I saw an article in your paper agreeing almost identically with my system, so I thought I would wait and send you a note on spring management.

It is often remarked by individuals, that it is of no use for me to try bees, as I never had any luck with them. This opinion should not discourage any one, as there are lots of men who never have any luck with anything. I am not a luck man, but hold that a man will succeed exactly according to the manner in which he does his business. If you wish to try bees you must understand the bee. You must learn what they are capable of doing and what they must have done for them. The spring is the most trying time. To keep them from spring dwindling is the most trying part of bee-keeping. As soon as they are put out in the spring they must be thoroughly cleaned of all dead bees and any sign of the work of the bee moth, and see that the queen is all right and that they have

plenty of honey for the young bees. Be sure and have the top of the hive covered warm. I use newspapers for this purpose in the spring and find them very good to keep in the heat. You must do all you can to have the bees fill the hive when the honey flow begins, then you are all right. The way I do is to watch the white clover and put on my supers about one week before the honey flow begins; after this, if you give them plenty of room to store honey, they will not be likely to cast any swarms.  
J. B. STONE,  
Northumberland Co., Ont.

## POULTRY.

### A Good Poultry Bill of Fare Wanted.

A subscriber asks information through the FARMER'S ADVOCATE as to the amount of food required for a pen of thirty hens. We have submitted the enquiry to a number of successful poultry breeders, and herewith append some of the answers received:—

If your correspondent wants eggs, he must feed such material as will make eggs; and if he wants to produce fowls for market, he will have to adopt an entirely different plan.

As I raise both eggs and chickens for market, also exhibition stock, I will give you my bill of fare for the year round.

Each morning I make a mash of one-half bran and the other half equal parts ground wheat, oats and barley, or any of these when all are not convenient; all the house scraps and vegetables I can gather I cook and add to this mash; scald the mixture and work it into a crumbly mess. I also give them ground bone twice a week in the mash. Always feed hot in cold weather. After the soft feed is eaten up, I scatter a little wheat amongst the litter to keep them working until evening, when I give them all the wheat or oats they can eat in a trough. In winter we always warm this evening meal.

For thirty hens I would give four quarts of mash, as above, for the morning meal, and when eaten up would scatter one pint of whole wheat, oats or barley to keep them actively engaged until evening, when I would give them all they could eat of whole grain, warmed. This should be given before they go to roost, otherwise they will not care to come off the roost, and if any is left in the trough it will do for next day. The same may be said of the soft feed in the morning, as I often find that they eat more some times than at others. Always keep plenty of grit before them, and when the house is warm have cabbage hanging around for them to eat, not forgetting a plentiful supply of pure water, and if the henhouse is cold this should be renewed at least twice a day, warmed. C. S. MATHESON.

### SHEAF OATS GOOD EVEN FOR THE HEN.

For thirty hens, two quarts of soft feed in the morning as soon as it is light. I cut green oat sheaves up fine, fill a pail with this and pour two quarts of hot water on it; cover tight; let it steep all night; in the morning thicken with bran and shorts. At noon give one quart of grain, scattered in cut straw or chaff to make them scratch; give plenty of fresh water, also plenty of gravel, broken glass or dishes. Once or twice a week throw whole potatoes, turnips cut in two, or cabbage for them to pick at. I use all kinds of grain—wheat, oats or barley; sometimes I feed them a drink of milk. In the breeding season I feed cut green bone, about 1 oz. per hen per day. By all means keep the fowls clear from lice.  
H. K. ZAVITZ,  
Carberry, Man.

### Three Full Feeds per Day, with Plenty of Exercise.

The first thing in the morning I generally give my birds a warm feed (we will say there are thirty in the pen). One gallon is enough. I put in it boiled potatoes or parings, wheat, bran, chopped barley and oats, or any other ground grain I can get hold of. A pinch of salt is good once a week; mix thoroughly and feed warm in a trough. The trough I use is an inch board 10 in. wide and 4 ft. long; a short piece of lath at each corner, about 5 in. long, to keep it off the floor, also lath or narrow board about 6 in. above to keep birds from getting into feed with their feet. Another excellent soft feed I use very often is white clover cut very fine, boiling water put on and allowed to steam for about twenty minutes, then mixed with ground grain. The fowls are very fond of this food. At noon I generally feed grain, wheat, barley, oats, and if there is an exhibition in sight they sometimes get corn. For thirty birds two quarts is enough, and scatter it about as much as possible, as there is nothing like exercise to promote health among fowls. If you feed grain to fowls in such a way that they will not have to work to get it, they will finish their meal inside of five minutes, then will stand around and grow fat. About an hour before dark give wheat, about the same quantity, so they will go to roost with a full crop, as the nights in this country are very long. I generally lay in enough cabbage in the fall to do my birds through the winter. I suspend one cabbage in each pen by a string high enough to compel the birds to exert themselves to get at it. I also feed ground fresh bone occasionally. Another very important thing is to have a good supply of clean fresh water. Always have within reach a box of good sharp grit, and last, but not least, keep your poultry house dry, clean, and warm, and you will be surprised at the returns you get.  
WM. RUTHERFORD.

**Two Square Meals a Day.**

I generally measure the feed, having no means of weighing. In the morning I take about two quarts of shorts or bran and shorts equally mixed, add about a pint of oil meal, season a little with pepper and salt, and scald, mixing crumbly, not wet. This is fed on alternate mornings, as early as it is possible for the birds to see to eat it. Other mornings they get just wheat, about a handful to each bird. I might say that the oil meal is to take the place of green cut bone as much as it can, for cut bone is hard to procure here in Manitoba. Still, it does not hurt them to give a little oil meal all the time in the mash, for it serves to keep the birds in health, being a good tonic. Of course, if it is possible to get green bone, it is best fed at midday, just a little each day, or, in its stead, cooked meat chopped fine. I do not feed another good meal after the morning meal, except a few handfuls of screenings or small wheat thrown amongst straw or chaff at noon to give them some exercise until the evening feed, which I give them at a time which will enable them to see to pick it all up before going to roost. I give them a good feed of barley or wheat, about a handful and a half to each bird. Besides this regular feed, they have turnips or cabbage to peck at all the time, plenty of grit and clean water.

Winnipeg.

SAMUEL WISE.

**GARDEN AND ORCHARD.**

**Black Knot and Peach Yellows.**

BY M. BURRELL.

Amongst the thousand and one difficulties which the fruit grower has continually to face are innumerable fungoid diseases affecting both tree and fruit. Fungi are low forms of vegetable life which propagate themselves, not by seeds, but by minute spores. Amongst them are the rusts, smuts, moulds, mildews, etc., and to this class also belongs the "black knot" of the plum and cherry, or, to speak more correctly, the parasitic fungus which causes the black knot. It is hardly necessary to say that to fight an enemy successfully, whether an insect, a fungus, or a weed, we must know something of its life history, how it reproduces itself, when it is at its weakest, etc. Without some special knowledge of this sort labor is often worse than useless. But with an accurate understanding of the principal habits of the foe, extermination is often a comparatively easy task. It is not so long ago that many people believed that black knot was caused by an insect. I have no doubt a few growers still believe it to be the case. While lack of space forbids a lengthy refutation, I may briefly say that many knots are found perfectly free from insects, and, again, as many as nine (9) distinct species of insects have been found in knots. The insects are there feeding on the diseased tissue, but they by no means produced the disease. On the other hand, the characteristic fungus is present in every knot. The fact is, the history of this fungus has been minutely worked out and its various phases clearly defined, so that we know "where we are at."

The young swelling knot formed early in the spring bursts the bark about June and the mature spores are carried by thousands through the air to germinate and produce other knots where they alight. In the meanwhile the old knot develops a black and brittle incrustation, underneath which commences the formation of another crop of spores, which comes to maturity during the latter part of the winter. There are thus two clearly defined crops of spores during the year. The orchards, therefore, should be examined twice—once before the first crop matures in June, and once in the late fall or early winter, and the knots carefully cut out and burnt. I make a practice of collecting the knots in a basket as they are cut and bringing them at once to the house stove.

It should be emphatically stated that cutting off the knots and leaving them on the ground is simply useless, as the spores will be disseminated about as easily from the ground as from the tree. When the knot is on a small limb it is well, of course, to take off the limb, cutting well below the knot so that no discolored or poisoned tissue is left. If the knot is not too large and is on the trunk or a main limb, cut it out carefully and cleanly and paint the wound with linsed oil, or what is strongly recommended, apply tincture of iodine first and the oil afterwards.

We are fortunate in having an excellent law on the Statute Book in the Yellow and Black Knot Act of 1893. The trouble, as with other good laws, is getting the law enforced. Thorough inspection is duly provided for, fines for omission or irregular performance of duty, etc.; in short, the machinery is practically perfect, and I venture to say that if the Act was rigidly enforced black knot would be almost unknown in Ontario. How many counties are free from knot now? To their credit be it said, most professional fruit growers keep a sharp look-out in their own orchards. The trouble too often comes from the scrubby little cherry trees—straggling, neglected, and forlorn—along the fences of the farmers who do not make a specialty of fruit. We have all seen these trees literally studded with knots—far more knots than cherries,—spreading the mischief through the surrounding district.

It is well to remember that black knot will attack the sour cherry as freely as it will the plum tree. In my orchard of Early Richmond cherries (175 trees) I usually expect to find about thirty knots a year. In 1894, however, no less than 561

knots were found, and last year 180. How much of an orchard might be looked for in a few years if the trees were not regularly attended to? The fight must be systematic and constant. "If neglected for several years," says Prof. Taft, "it may make but little headway, but at length a time will come when it will sweep like fire through the orchards and entirely blot them out."

The same law which deals with black knot concerns itself with peach yellows, and the same general remarks apply. We know nothing definite yet as to the real cause of yellows; that is, we cannot give a distinct name as we can to the parasitic fungus which causes black knot. We do, however, know all the leading symptoms and that it is a highly contagious disease. We also know that no "doctoring" will avail to cure sick trees. A vigorous application of the axe and fire method is the only thing to keep the disease in check. In too many districts the law has been administered in the most shipshod and perfunctory manner, and in such districts the disease is steadily but surely destroying the orchards. As with the black knot so with the yellows, it is not enough for the individual grower to be careful. Preventive measures must be not only drastic but universal. One neglected orchard will contaminate a whole district. We can no longer plead ignorance; we can no longer plead want of power. It costs so much to bring a fruit tree to its bearing age that we can ill afford to neglect it after that period. Let us put our shoulders to the wheel and count, at all events, two enemies the less.

Lincoln Co., Ont.

**Dwarf Juneberry.**

BY JOHN CRAIG, HORTICULTURIST, EXPERIMENTAL FARM, OTTAWA.

The common Juneberry or shadbush (*Amelanchier canadensis*) grows wild over a large area of the country. Under ordinary conditions it reaches a height of fifteen to twenty-five feet. In the Northwestern States and in Western Canada dwarf varieties appear bearing fruit of edible size, and sufficiently good in quality to make it appreciated by the residents of those sections. Three or four varieties have been named and introduced. Among them we have "Improved Dwarf," "Success," "Osage," and "Gardner." Thus far, there has been very little difference in the size or appearance of the fruit from these bushes, although the fruit is generally larger than the uncultivated types. This illustration is from a photograph taken of fruit produced by a plant in nursery row at the Central Farm.



DWARF JUNE BERRY.

The fruit is very attractive in appearance, and quite palatable. Its resemblance to huckleberries applies to the flavor as well as the appearance. Large, well-ripened berries are richer and sweeter than blueberries.

In season, the fruit follows strawberries, coming in with currants. It ripens unevenly in the cluster, which, in my opinion, is one of its chief weaknesses, as in picking it is not so easy to select only the ripest berries, as may be done with raspberries, nor can the whole raceme be picked at once as may be done with currants.

It seems more than probable that for the Northwest and Manitoba these improved dwarf forms will be much appreciated, and it is not improbable that they may be found useful in Eastern Ontario and Quebec. It should be said that the birds appreciate Juneberries quite as much as they do cherries, so that unless grown in large quantities or protected with bird netting, the owner is likely to have his returns considerably lowered by these robbers.

**Nova Scotia Fruit Growers' Meeting.**

The thirty-third annual meeting of this Association was held in College Hall, Wolfville, January 21st to 23rd. President Bigelow presided; S. O. Parker, Secretary.

Among the speakers present were Profs. Craig and Fletcher, of the Experimental Farm, Ottawa; the Secretary for Agriculture, Mr. Chipman; Prof. Faville; H. H. How, of Annapolis; J. C. Black, Truro; and others. The meetings were opened with the annual address by the President, which reviewed the present position of the fruit industry, its progress and future prospects. In looking at the year's crop of apples, the output to foreign markets would be about half a million barrels. Over \$200,000 had already been paid to carriers for freight charges, which in many instances had eaten up the profits of the grower. The fruit grower should profit by the overproduction found this year and use it as a guide for the future, endeavoring to produce a barrel of first-class apples cheaper than at the present time, exercising economy in all departments. The abundance of small fruits during the past season tended to bring low prices, yet a good profit was realized. The "Black Knot Law" has proved a success wherever tried. The exhibit of fruit placed in Berlin had met with good results, and had assisted in opening up a market there,

which, it was to be regretted, had not been made use of by the Nova Scotians. The work of the Association, as a whole, was extending. The School of Horticulture was making a steady, healthy growth. He hoped that the cold storage scheme would soon be carried out, as proposed to the Local Government. In spite of the discouragement occasioned by the unremunerative price obtained for the crop already marketed, there were strong hopes of cheering prices in February and March for a large quantity of superior fruit still on hand.

Henry Shaw spoke on *Cranberry Growing in King's County*, which was followed with a paper by J. L. Bishop (Auburn) on *Progress in Cranberry Culture*. The first speaker told of over 2,000 barrels of cranberries being shipped the past season, netting from five to six dollars per barrel. The average crop was about fifty to eighty barrels per acre, costing about \$75 per acre, in most cases, to plant a bog. J. L. Bishop said the cultivated crop of Nova Scotia in 1891 was about 400 barrels. This year it was five or six times that amount, with a large number of new bogs being set out. The best vines to plant were those tested on home bogs taken from the natural bogs. There was danger in getting vines from the native bogs, due to their liability to ripen too late in the season. The discussion of the topic evoked many queries of a practical nature.

W. G. Archibald presented a paper on *A Present and Imperative View of Commercial Fruit Culture*. He favored the establishing of Government fruit farms for aiding in producing new fruits and looking after experiments in marketing of fruits, trying to raise the present standard.

W. W. Hubbon (Sussex, N. B.) gave a very practical address on *Extension of Horticultural Education*. This could be brought about in a practical way by taking the information to the farmers if they would not attend the schools established for their use, thus getting them interested.

*Pear Culture* was taken up by Prof. Craig in an instructive address. The position of the Annapolis Valley was favorable from a commercial standpoint and in many cases with a soil well adapted. The soil best suited for pear culture was one having a gravel subsoil. Thorough preparation of this soil was essential. The soil should be packed firmly about the roots in planting. Dwarf pears should be planted deeper than standards, and require more care in pruning to make a low top. The pruning of pears should take place during the early stages of the trees. In setting, place Dwarfs 10 feet apart, and Standards 25 feet. In picking fruit do not leave it until fully ripe; pick while hard, so as to stand handling and shipping. A good method to employ in mulching was to grow a crop of clover in the orchard, cutting the clover and letting it lie, acting as a fertilizer as well. One of the worst enemies of the pear grower was "pear blight," where the infested portions should be cut out and burned. "Pear scab," due to fungi (*Entomosporium*), causing pears to crack, should be sprayed with Bordeaux mixture. The Professor also gave a talk on *Orchard Cover Crops*, which resulted in the asking of a number of practical questions as to suitable crops to sow in orchards.

*The Future of the Apple Industry*, by O. R. H. Starr, urged the farmers to combine dairying with fruit growing, and thus prevent too great a loss during a time of overproduction. Other markets than London should be established. An afternoon was devoted to the discussion of *The Fruit Growers' Shipping Company*. The subject was introduced by Director Innis. A large number of shares had been subscribed; the Company was to be controlled by the shareholders, who were to be made up of the fruit growers of the Annapolis Valley; warehouses at railroad centers were to be established, steamers chartered, new markets opened up; in fact, the scheme was simply a co-operative one for the benefit of the fruit growers. The project received the unanimous endorsement of the Association. Prof. Jas. Fletcher, Dominion Entomologist for Experimental Farms, gave a comprehensive address on *Injurious Insects of the Farm and Garden*. Taking up the common insects, the speaker explained the underlying principles that would be of assistance in combating these pests, pointing out sucking and chewing insects; the former treated with material for destruction of tissue or by closing of the pores of the body, the second treated with poison to devour with their food. A large number of common insects were named, and remedy for their destruction given. The pig borer and other insects that attack the stem of the tree could be prevented and destroyed by using alkaline washes in May and June, when eggs were being deposited and the young hatching. Fruit growers should spray more thoroughly and knowingly. Outworm on cabbage might be prevented by putting circular pieces of paper about each plant, next to the soil at collar of the root. It was now thought that there was a certain age in the development of the canker worm that Paris green was of little avail, hence the necessity of early spraying. The address brought forth a lively discussion, and many questions were satisfactorily answered.

*Cidermaking* was treated of by J. A. Chipman (Halifax) in an able paper, showing the various processes employed in the manufacture of apple cider. A scheme was being formulated to establish a cider factory in the Province for work next season to utilize the surplus fruits. *Nursery Work* was the title of a carefully prepared paper presented by H. O. Morton (Lunenburg), student in the Horticultural School. The last evening of the

session was devoted to short addresses given by Prof. Faville, of the Horticultural School; B. W. Chipman, Secretary for Agriculture; Dr. E. M. Kierstead, of the University; Professors Craig and Fletcher. A number of important resolutions were passed by the Association, among which was a petition to the Minister of Trade and Commerce, asking an amendment to the Act regarding the size of apple barrels, making the stave 30 inches, distance between heads 27 inches, diameter of head 17 inches, diameter of bulge 19 inches. The meetings throughout were well attended, and were the most profitable for years. The exhibit of fruit, orchard and garden implements, etc., was large. If the various petitions presented are all granted, the result will be productive of great benefit to the Association. Prof. Faville, S. C. Parker, and R. W. Starr were appointed a committee to prepare a score card for judging fruits at exhibitions.

The Officers for the ensuing year are: Pres., J. W. Bigelow, Wolfville; Vice-Pres., C. R. H. Starr, Fort Williams; Sec., S. C. Parker, Berwick; Treas., George Munro, Wolfville.

### 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. Enquiries must in all cases attach their name and address in full, though not necessarily for publication.]

#### Veterinary.

##### TUMOR ON HORSE.

J. W. DOHERTY, Kent Co., N. B.:—"A four-year-old gelding last fall showed a slight puff on the inside of hock, which caused slight lameness. As time passed the enlargement assumed the form of a tumor, the skin ulcerated, with a slight discharge of pus. It has a base of three inches moderately firm adherent to the tissues about the size of a closed fist. It does not look like a wart that I ever saw, but more the appearance of an epithelioma on the human body. What is it? What treatment would you advise?"

[Fortunately, animals rarely are affected with malignant growths; they are mostly of a benign character. This case occurs to us as being of that order, and we are inclined to think that it is a warty papillomata. We would certainly recommend that it be dissected out and dressed with a view to prevent further growth by means of constant pressure. DR. W. MOLLER, M. R. C. V. S.]

##### INDIGESTION IN MARE.

J. E. S., Monck Co., Ont.:—"I have a valuable young mare, coming six years, that I purchased last spring for a driver, and she is troubled with the scours, at least as soon as she is driven a short distance and gets slightly warmed up. She is fed on good hay and oats. Would you please tell me the cause, and what would you suggest as a cure?"

[Your mare has indigestion. Have her teeth examined by a competent veterinarian and feed her less liberally on grain. Better have her oats ground and feed a little bran in each feed. Always water before feeding and do not allow her to drink large quantities at once, especially just before driving? As a tonic give a teaspoonful of the following in each feed for a few weeks: Bicarbonate of soda, pulv. gentian, charcoal, of each four ounces; pulv. nux vomica, two ounces; pulv. capsicum, six drams. Always drive slow for the first two or three miles, as she is probably of a nervous disposition and fretful.]

##### PROLAPSE OF THE UTERUS.

A SUBSCRIBER, Huron Co., Ont.:—"I have a ewe that is heavy with lamb, but will not be due to lamb for several weeks yet. When she lies down and chews her cud her womb or something of that kind protrudes about the size of a man's closed hand. When she rises up it disappears out of sight. She does not appear to be sick and is always ready for her feed with the rest. I am feeding to five ewes about a half bushel turnips and a half gallon oats and peas, mixed, three times a day, with pea straw. Will any serious results follow, or can you recommend any treatment?"

[We have known many similar cases both in ewes and cows. It is seldom that any serious consequences follow. The ewe will probably go her full time, give birth to her lambs without difficulty, and have no after trouble. You are feeding pretty heavily, and the trouble is more likely to occur in the case of ewes that are fat and full. We would advise feeding more sparingly and withholding the turnips until after lambing. Substitute bran for peas in the ration. If the trouble gets worse tie three or four locks of wool across the vagina. If it is a short-wooled sheep binder twine may be used, tied to locks of wool and across the passage. This should be removed when the signs of parturition are observed.]

##### DEHORNING CALVES.

SUBSCRIBER, Halton Co., Ont.:—"What is used to stop the growth of horns on young calves, and how soon should the application be put on?"

[Scrape the tender horn with a knife and rub with a stick of caustic potash (moistened) at the age of eight or ten days. Two applications are generally sufficient.]

##### COWS WILL NOT DRY.

HOMER BEAMER, Middlesex Co., Ont.:—"Would you kindly inform me through your valuable paper

the best method to manage a cow that does not go dry before coming in. I have owned her three years and she has never gone dry. Have considerable trouble with her udder when she comes in."

[The very fact that the cow in question gives trouble with her udder at calving time when she fails to go dry indicates that it would be a more serious case with her should she be allowed to dry, because of the extreme activity of her lacteal organ—the udder. We know of a number of dairymen who never allow their best cows to dry before calving because of the danger such would involve. They feed moderately on rather dry food and give the last three weeks' milk to the calves or pigs.]

#### Miscellaneous.

##### TREATMENT FOR SMUT IN OATS.

R. M. WHITE, Cardwell, Ont.:—"1. Will you give a method other than the 'hot water' for preparing seed oats so as to prevent smut? 2. Would the sulphate of copper or blue vitriol preparation which is commonly used for seed wheat injure the seed oats?"

[1. The most effective method of ridding oats of smut is to immerse the seed for about forty-five minutes in a 3 per cent. solution of potassium sulphide (liver of sulphur). The difficulty of drying the seed after the treatment is not great, provided one has a floor space of suitable area. The seed may be several inches deep, and yet dry in a comparatively short time if frequently turned with a shovel. The application may be made in a tub, a half barrel, or other tight box. The number of gallons of water desired (for example, 25 gals.) would be provided, in which should be dissolved six pounds of the fungicide. The seed should be stirred a few times while in solution. A man's ingenuity will suggest the best method of making the immersion—whether to put the seed in a sack of coarse cloth, in a basket or frame covered with wire gauze, or directly in the watery solution. 2. While in Manitoba sulphate of copper is as effectively used with oats as with wheat, experiments conducted by Prof. W. A. Kellerman, of Ohio Experiment Station, have proved conclusively that copper sulphate has the effect of delaying germination, while potassium sulphide is just as effective as a fungicide, while it causes no delay in germination.]

##### TOLL FOR GRISTING.

H. B., Middlesex Co., Ont.:—"Is there a statute governing the amount of toll custom grist mills are allowed for gristing, and what is the amount of the toll?"

[We are not aware that a statute exists governing the toll for gristing. The custom was in the days of tolling for millers in water power mills to charge one-twelfth, and in steam power mills one-tenth. It is now the general custom to exchange so much wheat of certain weight and quality for so much flour, or flour, bran, and shorts.]

##### SILAGE FOR COWS.

A. M., Perth Co., Ont.:—"I am making preparation for building a silo, but am told that silage is not fit to feed to cattle, especially milch cows, as it will destroy their teeth in two years, and as I have six cows which I would feed silage to if I built the silo, I would like to hear from Mr. E. D. Tillson, of Tilsonburg, or some one else who has had considerable experience with silage before building. I am a constant reader of the ADVOCATE and would feel greatly obliged for above information."

[One of our staff has fed cows, some fourteen head, ensilage for six winters and has yet to see the first bad effects on their teeth.—EDITOR.]

##### MR. TILLSON'S REPLY.

In reply to your correspondent's enquiry regarding the effect of silage on cows' teeth, I may say that I have fed silage in large quantities to my cows for fifteen years and have never seen the sign of any bad effects, either on their teeth or in any other way. I have fed it to horses, hogs, cattle of all ages—milking, fattening, and growing—and could not see my way clear to farm without it. I have fed it alone to young cattle all winter as an experiment and they came out all right, but did not do quite as well as those to which dry fodder, such as hay or straw, was given in addition. The feeding of ensilage to all sorts of stock has been entirely satisfactory. Young cattle grow rapidly, beefing cattle fatten readily, and milking cows give a liberal flow of milk on it, and the effects upon their health has been to keep it in the most desirable condition, and as for injuring the teeth I have yet to see the first ill effects. No doubt your correspondent was advised by some one who never used silage.

Norfolk Co., Ont.]

A. PATRON, Iowa, U. S.:—"Can you or any of the readers of the ADVOCATE tell me through your valuable paper how to make a small butter-worker, giving illustration of same; one that I could work the product of five to fifteen cows?"

[Will some kindly disposed dairyman send us a description of a butter-worker such as Mr. Patron and many other readers would like to see in our columns.]

##### WANTS EMBDEN GEES.

L. C. McC., Elgin Co., Ont.:—"Can you give the address of any breeder of Embden geese? I have been watching your columns for some time, looking for some one to advertise."

[If some breeder of Embden geese will place an advertisement with us he will do himself and such men as L. C. McC. a positive benefit.]

#### GREEN VS. RIPENED OATS AND WHEAT.

GAVEN L. STAIRS, Hants Co., N. S.:—"Would one obtain as much nourishment from a field of oats or of wheat in cutting the crop and curing it as oat hay or wheat hay—the same to be cut when the grain is in the milk stage—as to allow it to ripen to be threshed, the product in grain to be ground and again mixed with the cut straw, the whole to be fed to beef cattle? If one could obtain as much food from the crop in this manner it would save an immense amount of labor, time, and money. The grain crops raised on my farm are all sold off the farm as beef, and as I raise or will raise in a few years' time some thirty acres of grain, I would like to have your opinion on this subject. To my way of looking at it, I cannot possibly see any good in allowing the grain to ripen. At what stage of ripeness should the crop be cut so as to have the full amount of nourishment in the straw?"

[The above is undoubtedly a very practical question, to which many dairy and beef-raising farmers are devoting some attention. The question of labor-saving is undoubtedly money-saving when wisely done. In reply to Mr. Stairs, we would refer to our own experience with oat hay. On two occasions we were short of winter fodder, and cut a field of oats in the milk stage. The crop was heavy and took considerable curing. We stacked the fodder and commenced feeding it to milch cows about February. The fodder retained its green color fairly well, but had a rank, unsavory odor which the cows did not relish, but they picked it over, leaving quite as much or perhaps more than they would have of oat straw. Had the crop been less bulky and rank-growing, the fodder no doubt would have been palatable and the results more favorable. As it was, we decided that green oats were not what they were cracked up to be. In our opinion one of the first essentials in a fodder is palatability. If stock do not relish a food it will do them very little good, no matter what nutriment it contains. According to our experience, the best time to cut an oat crop is when the grain is well advanced in the dough stage; it will by then have received all its nutriment, some of which will be in the straw, which will readily dry in small sheaves. If this could be very carefully fed as cut, sheaf by sheaf, so that the feeder could know how much grain each animal was getting, no doubt the results would be as satisfactory as by any other method; but when a pile is cut at once and shaken up, as it is sure to be, the oats would settle to the bottom, which would render anything like accurate feeding for each animal next to impossible. We would, therefore, recommend cutting the grain on the green side, having it threshed and fed mixed in the desired proportions. This is a subject on which considerable helpful discussion might well arise. We therefore invite the views of practical men based on experience.—ED.]

#### FERTILIZER FOR MANGELS—PRIZE PUMPKINS.

MR. D. PELTON, Grenville Co., Ont.:—"Will you kindly answer the following questions through the columns of the ADVOCATE: (1) Is hen droppings considered a good fertilizer for mangels and all kind of roots? What is the best fertilizer for roots and vegetables? (2) For prize specimens of pumpkins do you advise growing with corn or separately?"

[(1) Hen droppings alone are too strong for any crop, but mixed with farmyard manure, ashes or soil into the form of a compost they would give excellent results upon mangels or other root or garden crops. A liberal general manuring with farmyard manure is generally the most suitable fertilizer for roots and vegetables, but if a quicker acting stimulator is desired for turnips apply superphosphate, or for mangels, nitrate of sodium or sulphate of ammonia. (2) We believe the largest pumpkins can be grown by planting alone on rich soil, leaving the plants a good distance apart, six or eight feet, and giving frequent surface cultivation, also a few applications of liquid manure through the season.]

#### CRIMSON CLOVER—KAFFIR CORN—FLAX.

F. WALKER, Oxford Co.:—"1. Will you please give in your paper some notes on crimson clover. Would it afford any considerable fall pasture sown in corn after last cultivating, say end of July or first of August. If so, should it be left for another year or plowed up? 2. Would you recommend growing Kaffir corn as a fodder? 3. What do you think of sowing a small quantity of flax seed in oats, and how much? We value your paper very highly."

[1. Crimson clover has had very little trial in Ontario as yet, but from a number of reports received we have yet to hear the first favorable one regarding it. Sown as suggested in July or August, it would not produce any pasture to speak of that fall, but in a favorable location, soil, and season, it might survive the winter and produce a fair crop the following season. It being an annual, it seeds the first summer and dies. Sown for three seasons in spring at the Guelph Experimental Farm, it produced per acre 4.66 tons of green fodder. 2. Kaffir corn has been given very little trial in Ontario, but as it is a Southern or African plant, we do not consider it will ever be grown much in this country, since we already have so many satisfactory fodder crops, such as corn, lucern, millet, etc. Grown two seasons at the Guelph Farm, it produced an average of 9.15 tons of crop, without heads. There could be no harm in sowing a small plot for a trial. 3. The practice of sowing flax among oats or barley is yearly increasing. A bushel sown on

from eight to ten acres will produce considerable seed. It will not do well along with heavy-strawed grain.]

HOW TO RID SEED PEAS OF BUGS.

SUBSCRIBER, Middlesex Co., Ont.:—"1. How are bugs in peas killed in sections where peas are grown extensively? 2. Would the methods there practiced by large seed firms be practicable in small farm granaries? 3. (a) Will it injure the grain for feeding purposes, or (b) for seed?"

[In reply to the questions proposed by a reader of your valuable Agricultural Journal, I may say in answer to question No. 1, that the different pea firms represented in the county have in connection with their warehouses "bug-houses." These are airtight chambers, which will hold a considerable quantity of peas. The peas, which are in bags, are piled as high as men can reach, tier upon tier, until the place is full. A chemical preparation called the bisulphide of carbon is placed at the top of the peas in a shallow vessel and ignited. The evolving gas is very heavy, and penetrates everything in the room. Some hold that the bugs are killed by the exhaustion of the oxygen, which is consumed in the process of combustion. Others claim that the bugs are suffocated by the gas. In whatever way it is done, it seems to do the work well. Each lot of peas are treated twenty-four hours, I think. 2. I think it would be better to have a small room or building fitted up for the purpose at a mill, or other convenient point, where the farmers of a neighborhood could easily make use of it. One could, however, at a small cost, fit up a box for this purpose, making it airtight by lining it with zinc. 3. (a) No, not to my knowledge. I base my conclusion on the fact that the cull peas from recleaning the peas at the seed houses after being treated for the bug are used for feeding purposes, and I have not heard of any injury. (b) No. All our seed peas obtained from the different companies are treated in this way.

T. G. RAYNOR.

Prince Edward Co., Ont.]

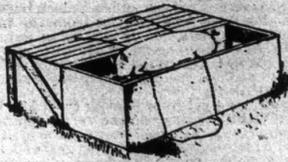
VENTILATION SCHEME WANTED.

J. A. L., Durham Co., Ont.:—"As I contemplate constructing a stock barn this coming summer, I would like to hear from some of your readers who have satisfactory ventilation schemes, so that I might be helped in choosing from among them which will best suit my purpose."

[We regard the above as an inquiry prompted by wisdom, as the health of stock is largely influenced by the condition of the atmosphere they breathe. While we have referred to a number of ventilation plans in our columns within the last two years, viz., Messrs. E. D. Tillson's, Capt. D. Milroy's, Thos. Irwin's, and others, we will be pleased to publish, this plans of others for the benefit of J. A. L. and numerous other readers.]

SCALDING TROUGH.

T. R. P., Hayfield, Man.:—"Can you or some reader of the ADVOCATE who has used a trough for scalding hogs, when butchering, give the proper dimensions for one suitable for hogs weighing 200 or 250 lbs?"



SCALDING TROUGH.

[A good hog-scalding contrivance is represented in the accompanying illustration. The trough is like an ordinary water trough, about 6 feet long, 20 inches deep, and 22 inches wide. An ordinary light logging chain, as shown in the cut, is placed across the trough about 20 or 24 inches apart. The pig is lowered in and rolled by one or two men standing on the platform level with the top of the box. The loop of chain is drawn up over the pig and held in the hand or by a cross-handled pig hook. The free ends are also grasped in the other hand, which renders the rolling quite easy. A very heavy pig can be easily handled and thoroughly scalded by two men in this way. When the hair will slip off the legs and ears the pig can be easily rolled out by means of the chain onto the platform. The same trough is very suitable for dipping lambs or even grown sheep.]

HOG HOUSE PLAN WANTED.

N. B. STILES, Wellington Co.:—"Would you kindly give description of the best plan of pigen in your next issue; plain and durable so it will be warm enough to have young pigs come any time in the winter season; (2) also the best way of saving pig manure?"

[(1) See answer to question re model hog house in Feb. 15th issue, page 80. (2) Have water-tight floors (cement preferred), use sufficient litter to absorb the liquid, clean out every day or two, and either mix it with the manure in the yard from other stock or haul it directly to the field.]

SHORTS VS. OATS FOR YOUNG PIGS.

J. S., Victoria Co.:—"Would you prefer shorts to crushed oats for young pigs when the oats can be exchanged for shorts, pound for pound?"

[I should certainly prefer the shorts, as oats are too chaffy for young pigs unless the hulls are sifted out. Middlings would be still better; in fact, I regard middlings as almost indispensable unless one

has an abundance of skim milk, in which case the shorts may be made to answer. A few oats, by way of variety, may be fed after the pigs are three or four months old.

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

MARKETS.

Toronto Cattle Market.

The market is decidedly better; the improvement foreshadowed in my last communication has been realized; prices have advanced \$2 per head; everything sold early, and more could have been taken. Montreal buyers were not satisfied and waited over from Friday last until today. There is yet a demand for good stuff; trade was brisk, and an early clearance was made of all the best cattle on hand. Buffalo buyers were over in force; added to those from outside districts, made up almost as many buyers as sellers. Altogether the market was the best since most satisfactory we have experienced in months. The impression appears to be among the Buffalo buyers that quarantine or increased duty will be probably imposed at an early date, and that they had better buy before anything happens. The shipping to Buffalo to-day was the largest since quarantine was lifted. It was found necessary to make a special shipment of seven cars by the Grand Trunk Railway.

The receipts of cattle for the past week were 2,692 cattle, 491 sheep and lambs, and 3,909 hogs.

Export Cattle.—Buyers from Montreal and Buffalo caused a brisk trade in this branch. Messrs. Eakins, Hemisett, and Thos. Crawford, M.P.P., were the principal operators. Mr. A. Thompson is on a visit to Texas, U. S. Prices ranged from \$3.50 to \$4.25. One load sold for \$3.30, while 10c was paid extra for choice sections. Some of the best butchers' cattle were taken by the exporters.

Butchers' Cattle.—Trade quite lively; butchers out in force; everything sold better; 3c. for best choice cattle; 3c. to 3 1/2c. for best. Local trade good; average cattle sold at from 2 1/2c. to 2 3/4c. per lb.; several loads went for 2 1/2c.; little, if any, sold below this price. Shippers were buying any prime stock, but the local demand was good, consequently the prices held better and all kinds of stock was materially increased in value.

Bulls sold well; not many on offer; good shipping bulls wanted. Prices range from 2 1/2c. to 3 1/4c. per lb.; in one case 3 1/2c. was paid. There is a steady demand and good enquiry for choice bulls for shipping purposes.

Stockers.—Not many offered; good enquiry; a fair trade done at from 2 1/2c. to 3c. per lb. Stockers wanted for Buffalo at once.

Feeders are in fair demand at from 3c. to 3 1/2c. per lb.

Sheep and Lambs.—Lambs in good demand; prices firmer for extra choice grain-fed lambs, from 9c. to 10c. per lb., 4c. per lb.; some choice barnyard lambs, 4 1/2c. per lb. was paid. Sheep all sold before midday. A few good butchers' sheep wanted at once. Prices are firmer, at from \$3 to \$4 per head. Choice wethers, \$3.50 to \$4.00; heavy wethers, \$3.00 to \$3.50; but inferior are not wanted and cannot find buyers just now.

Milk Cows.—Not much demand; what few were offered sold at from \$20 to \$30 each; only about one dozen on sale.

Hog Market.—This market shows great improvement, prices firm and unchanged. For choice bacon hogs \$4.75 is easily obtained, and 10c. higher may be if choice and the right sort. Thick fat from \$3.50 to \$3.60, and 10c. Singers, \$4.50. Some fetch \$3 to \$3.10. Stags, \$2 per 100 lbs. A shortage is predicted by all dealers, the market is active, prices firm, and prospects good.

Dressed Hogs.—Considerable briskness was manifested in the dressed hogs business. Farmers' loads: choice stock, \$5.75; for light, \$5.50 to \$5.60.

Hay.—Twenty-five loads of hay on sale to-day; prices ranged from \$13 to \$14 per ton.

Straw.—About six loads of straw at \$7 to \$8 per ton.

Eggs.—Supplies of new laid are larger, and prices are easy. Top price is now 15c.; held fresh, 3c. to 10c. per dozen.

Butter.—Market quite firm. Prices rather better than last week. Choice dairy rolls, 13c. to 14c. per lb. Creamery products, 20c. to 22c. per lb.

Cheese.—There is no pressure to sell round lots on the part of outside holders, and prices are firm. Summer make quoted at 10c., late makes at 11c. to 12c. per lb.

GRAIN MARKETS.

Wheat.—On the street market three loads of white wheat sold at 79c. to 80c. per bushel; one load of goose wheat at 63c.

Oats.—About 200 bushels of oats sold at 31c. per bushel.

Barley.—Remains about steady, with little business doing. No. 1 fancy sells at 31c. to 35c. per bushel; 300 bushels on offer. Feb. 23rd, 1897.

Montreal Markets.

Contrary to all expectations, the relief looked for in the shipment of feeding cattle from Ontario to Buffalo has had as yet no effect worth mentioning on this market. On all occasions lately the offerings have been much heavier than the demand, and the natural consequences bad markets for drovers. Some improvement may be noted in the poorer stock, but none in the better. The top price paid for butcher stock this week was 3 1/2c. per lb. to 3 3/4c.; fair to medium, 2 1/2c. to 3c.; common, 1 1/2c. to 2c. per lb.

About seven cars of fairish export stock sold in the yards at prices ranging from 3 1/2c. to 4c., the last being an outside figure for tops. Were more suitable stock offered for export there would be a considerably better demand and at fairly good prices, but the stock offered is not up to requirements.

Sheep and Lambs.—In our last report a prospective advance in lambs was mentioned. This has been realized, the advance being more than expected, or 1c. per lb. better for lambs, and a shade over for anything really fancy. Choice lambs last week and this reached the highest price for many a day, when 5c. per lb. was paid for them, live weight. Whether this is the limit or not is hard to say, as lambs, either alive or dressed, are scarce, and sheep are too heavy and fat to meet with the approval of butchers. This week's market was a little better for sheep, owing to the light run of both, and sales were made at 3c. to 3 1/2c., and 4c. to 4 1/2c. per lb., mixed lots of sheep and lambs.

Calves.—There is a fair enquiry for good calves, but poor ones are neglected; the former selling from \$8 to \$10 each; medium, \$4 to \$6, and culls as low as \$1.50 each.

Hides and Skins.—No change has yet taken place in this line, but from the present outlook there seems to be every prospect of an early advance in prices, not only in sympathy with the stronger feeling and higher prices prevailing in the Western U. S. markets, but with the firm enquiry on spot from tanners. These latter are making a strong effort to force prices down, as they put it to be a better basis to meet the leather market, but these efforts will undoubtedly be unavailing. The hides are pretty well in a few hands, and they are strong holders; and if any move be made, it will in all probability be an upward one. Butchers are now receiving for their green-salted hides 7c. to 8c. per lb. for Nos. 1, 2, 3; 7c. and 5c. per lb., for Nos. 1 and 2 calf skins; 9c. for lamb skins.

DRESSED MEATS.

Hogs.—The scarcity prevailing in the lamb market for nice light weights is also very much in evidence in this market; so much so has the demand exceeded the supply that light bacon hogs are at a premium even at \$6 per cwt. in car lots, and if the present light supply continues it would not be far amiss to look for the very high prices of 1895, when light hogs touched the high price of \$9 per cwt. Car lots have this week changed hands at \$3.75 and \$4 per cwt., and it is said one or two have sold at 50c. to 75c. within the past two weeks. Heavy hogs were only a matter of 10c. to 15c. firmer. In small lots and single carcasses \$6.50 to \$6.75 is being obtained.

Beef and Lambs are unchanged, the former being dull and sluggish, and the latter firm at 60c. to 63c. in car lots, of which there are very few offerings; 7c. to 7 1/2c. in small lots.

Montreal Horse Market.

The good feeling continues in this line and fancy horses are bringing fancy prices; choice drafts are in demand and readily sell up to \$115 each; very good blocks and lighter drafters ranging from \$65 to \$85 each. British cables are steady and leave a light margin for a good horse.

Buffalo Markets.

Canada Feeders.—Choice quality, 1,000 lbs., \$4.00 to \$4.05; choice quality, 900 to 950 lbs., \$3.80 to \$3.90; fair to good quality, 850 to 900 lbs., \$3.60 to \$3.75; fair to good quality, 700 to 800 lbs., \$3.35 to \$3.50; common kinds, \$3.00 to \$3.25.

Canada Heifers.—Good to choice, 850 to 900 lbs., \$3.75 to \$3.90; fair to good, 750 to 850 lbs., \$3.40 to \$3.65; common and light, \$2.75 to \$3.15.

In spite of the heavy run on Monday, about eighty loads, two loads yesterday and eight loads today, the market continues to rule steady to strong, particularly so on good to choice kinds, as the demand for them as yet does not seem to be supplied. So long as it continues, present prices are likely to be maintained. We don't expect that they will go any higher; compared with other points in the States values are high on this market. Those weighing from 600 to 800 lbs., of medium quality, have also been selling proportionately as well as the choice ones, but the fair and common kinds are not wanted as readily as the others.

Butcher stuff is selling fairly well and the market shows no material change compared with last writing.

Buffalo, Feb. 24th, 1897. ERICK BROS.

Chatty Stock Letter from Chicago.

(BY OUR SPECIAL CORRESPONDENT.)

Following are the current and comparative prices for the various grades of live stock:—

Table with columns for CATTLE, HOGS, SHEEP, and various grades of stock. It includes 'Present' and 'Top prices' for 'Two weeks ago' and '1895'.

There is quite a strong movement on foot looking to the adoption of ad valorem instead of specific duties on cattle imported into the States from Canada and Mexico. The people interested in this, light Mexican cattle are the chief pushers.

The average weights of cattle are much lighter than a year ago, when large quantities of 1,400 to 1,800 lb. cattle were selling at \$3.75 to \$4.25.

Hogs are averaging lighter in weight than a year ago, with farmers using corn for fuel.

Ryan Bros. recently bought 1,600 head of two-year-old Aberdeen-Angus steers of the Capital Syndicate in Texas at about \$24 per head. The winter on the Western ranges seems to have been exceedingly mild, contrary to general expectations. G. W. Baker, of McCloud, Mont., was here recently with a carload of Montana grass cattle shipped from Big Timber. The steers sold at \$3.60; cows, \$2.85 to \$3.50; calves, \$5 to \$5.25, and one bull at \$2.50. He says cattle on the ranges are in better shape than for many years, with the country the finest in fifteen years.

At the recent Spain-Newsaps speed sale, at the Chicago Stock Yards, there was a fine display of speed, and sales included the following: Sandy Boy, 2:12, trial 2:07 1/2, ch h (6), by Sphinx, 2:30, dam Lisette, dam of three in the list, by Mambrino Gift, 2:30; John Huber, Chicago, \$3,100. Riley S., 2:14 1/2, trial 2:10 1/2, blk g (7), by Riley Medium, 2:16, dam Queen, dam of two in the list, by Henry Harris; John Beckwith, Chicago, \$750. Kathleen, 2:18, trial 2:14, ch m (6), by Red Shawmut, 2:24; dam Belmont, by Hambro, 2:31; J. F. Madden, Lexington, Ky, \$2,900. Don O'Leary, 2:14 1/2, blk g (6), by Corralito, 2:45; dam Donna, by Waverly; W. Thompson, Jackson, Mich., \$500. Alves, b g, foaled 1892, by Albertus, dam by Strathmore, C. H. Anthony, Muncie, Ind., \$900. Lake Erie, b g, foaled 1890, by Cadmus Hambletonian, dam Daisy Dayton; Geo. Ketchum, Toledo, \$2,900. Ralph Williams, b g, foaled 1891, by Red Baron, 2:24; dam Belmont, by Hambro, 2:31; J. F. 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THE HOUSE ON THE MARSH.

A Romance.

BY FLORENCE WARDEN.

(Continued from page 88.)

"Oh, you are very kind; and I dare say I do very well as a maid-servant when there is no more exciting amusement to be had."

"The Laurence how can you say such cruel things! Are you angry because I went to Denham Court, and because I engaged myself? I couldn't help it, everybody was so kind. But I thought of you all the time, and I wished with all my heart that you had been there."

He was touched at last; the hand with which he had been angrily pulling at his moustache dropped, and he was turning slowly toward me, when the church clock and the far-off Beaconburgh town-hall clock began to strike seven together.

"What is it?" asked Laurence, suddenly stiffening again.

"Mr. Rayner, I promised to be in the drawing-room to accompany his violin at a quarter to seven."

"Pray, don't let me detain you," said he between his teeth.

"I am sorry I came at all to disturb you in your meditations upon your late enjoyment. But as I shall leave Geldham for the Beaconburgh in two days, and shall not have another opportunity of seeing you before I go, I took the liberty of coming round this way. Good-night and good-bye, Miss Christie. I wish you another pleasant evening with Mr. Rayner."

He shook hands with me, and dashed away through the plantation before I could find voice to call him back. I sat there staring at the pond until Mr. Rayner himself came out in search of me; we went in, and I sat down to the piano, and struck out his violin.

But the spirit was not in me on this night, and I played the notes loudly or softly as was marked, without a spark of the fire which is the soul of music. Mr. Rayner stopped, put down his violin, and said—

"Come and sit by the fire."

"Oh, Mr. Rayner, I am so—"

"Yes, I know. You are so very sorry that you can't help thinking Denham there a livelier place than the Alders, and so very sorry that you were obliged to leave a lot of nice, bright, amusing people there to come back to a couple of very worthy, but prosy people who—"

"Oh, no, no, no, Mr. Rayner, I ought never to have gone at all."

"And now tell me all about Denham Court."

"Mr. Rayner, such a strange thing happened that I must tell you about it. I put my pendant into my desk—at least, I am almost sure I did—on Saturday night, and next day it was gone."

"Well, we must find you another."

"Oh, no! But this is the strangest part. Just before I left this morning, Mr. Carruthers' servant put it into my hand, saying he had picked it up on the stairs. And the little shield with the initials were broken off and lost. Isn't it strange?"

"Well, not considering that they were paste. If they had been diamonds, I should say it was very strange that he gave it back again. I suppose there were some ladies there with jewelry that made your eyes water."

"They didn't wear much; but I believe some of them had a great deal. One lady—she was the wife of a very rich merchant, who was there to see the diamonds, they said."

"And what was the name of the fortunate lady?"

"Mrs. Cunningham. She has one set of what they call 'on's-eyes' and large diamonds which she keeps—"

"That she keeps where?" said Mr. Rayner, yawning, as if tired.

"Oh, that she keeps always concealed about her person!" said I.

"Do you mean it?" he asked, much interested.

"Yes, really. She told me so. And nobody in the house, not even her maid, knows where they are. She sleeps with them under her pillow."

"Mr. Rayner rose."

"Well, I don't think even the responsibility of diamonds under your pillow would keep you awake to-night, for you must be tired out."

CHAPTER XIX.

Mr. Rayner was right. I was very tired; and the next morning I overslept myself, and did not come down-stairs until breakfast was more than half over. I found Mrs. Rayner in outdoor dress at the table.

"Well, Miss Christie, we have all got tired of you; so we are going to leave you all alone at the Alders," said Mr. Rayner, when he saw my astonished face.

I found that he was going up to town for a few days on business, he said; but he should combine pleasure with it—go the rounds of the theaters, and perhaps not be back until Saturday. This was Tuesday.

"Would you like to go to Beaconburgh with us? You have no lessons to do, as Haldee is still in bed, and Mrs. Rayner will have a companion to drive back with."

When we got to the station, we found that we were there a great deal too soon. Mr. Rayner walked up and down, talking to the station-master and the people he knew. He said to me once, when I was standing by him—

"If anything should happen while I am away—if Haldee should get worse, or Mrs. Rayner frighten you, or anything—telegraph to me at once at the Charing Cross Hotel. You will find some forms in my study, and you will just write it without saying a word to anybody, and you will just write it to Sam, and tell him to go to Beaconburgh with it at once. Mind—to Sam; don't trust any of the women-servants."

He said good-bye affectionately to his wife and kindly to me; and we saw him off, and then drove back to Geldham.

I spent a dull day; for when I went to see Haldee, Mrs. Rayner instantly left the room, and I could not help seeing that it was to avoid me; so I was obliged to resist the sick child's entreaties for me to stay.

It was about seven o'clock when Jane came up.

"I heard Miss Haldee a-calling for you, miss; and I don't believe she knows what she's saying, poor little dear; they ought to send for the doctor; but I don't suppose they will. Sarah don't care, and Mrs. Rayner don't care—that's about it, miss."

And Jane gave me a nod and an expressive look as I went out of the room with her.

My teeth chattered as I went through the passage, it was so cold; and what was my surprise to find, when I got to the end, that the window had been left open on this chilly and wet October evening! I took the liberty of shutting it, and, returning to the dressing-room door, I tapped softly at it. I could hear Haldee's voice, but I could not hear what she said, and Mrs. Rayner sobbing and calling her by name. I went in softly, and with a shriek the mother started up from her knees; she had been on the floor beside the bed. Haldee knew me, though her cheeks were flushed and her eyes bright with fever.

I sat on the bed and tried to make her lie down and keep the clothes over her, for the room was as cold as the corridor. Mrs. Rayner was clinging to the rail at the bottom of the little bed and watching me with eyes as glittering as the child's. I

felt just a little tremor of fear. Her bosom heaved and her hands clutched the rail tightly as she said:

"What right have you to come here! Are you not snug and warm up-stairs in your turret! Why must you come and exert over me! Can you not spare her to me now she is dying?"

I got dying, Mrs. Rayner; don't say that. I came down just to see if I could be of any use. And wouldn't it be better to send Sam to Beaconburgh for Dr. Lowe?"

Her manner changed. As she looked at me, all the anger, all the little gust of defiance faded out of her great eyes, and she fell to sobbing and whispering:

"I dare not—I dare not!"

"May I take her into your room, Mrs. Rayner?"

"No, no."

"Then, if you will allow me, I will take her up into mine."

Mrs. Rayner stared at me helplessly.

"Will you dare?" she asked, fearfully.

"Certainly, with your permission."

"You know very well that my permission is nothing," sobbed she.

I wrapped the child up well in a blanket, thinking I would put her in my own bed, until her little one could be taken up-stairs.

I turned to Mrs. Rayner.

"Don't be alarmed about Haldee," I said gently. "I'll take great care of her. And if you will just give your consent, I will send for a doctor on my own responsibility."

The poor thing stooped and kissed one of the hands I held round her child.

"Heaven bless you, Miss Christie!" she murmured; and, turning away, she burst into a flood of tears.

She would not listen to the few incoherent words I said to comfort her; and I was obliged to leave the room with tears in my eyes, and carry my little patient up-stairs.

And now how to get a doctor? I went down to the nursery, called Jane, who was just going to bed, and asked her where Sam slept.

"In the village," said she.

Jane was young to be sent all that way alone at night, the cook to old. There was only one thing to be done; I must go myself.

"Go and ask cook to lend me her big round water-proof cloak, Jane," said I, "and bring me one of Miss Haldee's Shetland veils."

She ran away, astonished, to fetch them; and then, seeing that I was in earnest, she helped quickly and well to make me as like a middle-aged country woman as possible. Then she let me out, giggling a little at my appearance, but promising faithfully not to leave Haldee till my return.

I felt rather frightened at the boldness of my undertaking as I heard the hall door close upon me, and realized that I had nothing to protect me all the long three miles and a half of road to Beaconburgh. I had got past the last of the Geldham cottages, when I heard the sounds of a vehicle coming along at a good pace behind me. It slackened, and I, to keep up my character, beat over my umbrella, and walked more slowly.

"Hallo, my good woman! Would you like a lift up the hill?" cried the driver; and my heart leapt up, for it was Laurence's voice.

"Ay, ay!" I grunted out, slowly; and waiting until the cart came up to me, I climbed, with his help, and with seeming difficulty, carefully keeping my cloak over my hands, on to the seat by his side.

"All right!" said he; and again I grunted "Ay, ay!" and on we went.

Oh how happy I felt to be again by his side!

I began to get impatient for him to know me. I looked at him furtively; and presently to my exceeding comfort, he pulled down over his wrists two little uncomfortable woolen cuffs that I had made, and that he had bought of me at the sale. It seemed to me that he handled them lovingly.

"Aren't you going to talk?" said I, in my natural voice.

He gave the reins such a jerk that the horse stopped.

"You won't be cross with me again, will you?" said I.

He slipped the reins into his right hand and put his other arm around me, and kissed me, and he told me his. His father was up to me, I swear it, and he told me his. His father was up to me, I swear it, and he told me his. His father was up to me, I swear it, and he told me his.

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The poor thing stooped and kissed one of the hands I held round her child.

"Heaven bless you, Miss Christie!" she murmured; and, turning away, she burst into a flood of tears.

She would not listen to the few incoherent words I said to comfort her; and I was obliged to leave the room with tears in my eyes, and carry my little patient up-stairs.

And now how to get a doctor? I went down to the nursery, called Jane, who was just going to bed, and asked her where Sam slept.

"In the village," said she.

Jane was young to be sent all that way alone at night, the cook to old. There was only one thing to be done; I must go myself.

"Go and ask cook to lend me her big round water-proof cloak, Jane," said I, "and bring me one of Miss Haldee's Shetland veils."

She ran away, astonished, to fetch them; and then, seeing that I was in earnest, she helped quickly and well to make me as like a middle-aged country woman as possible. Then she let me out, giggling a little at my appearance, but promising faithfully not to leave Haldee till my return.

I felt rather frightened at the boldness of my undertaking as I heard the hall door close upon me, and realized that I had nothing to protect me all the long three miles and a half of road to Beaconburgh. I had got past the last of the Geldham cottages, when I heard the sounds of a vehicle coming along at a good pace behind me. It slackened, and I, to keep up my character, beat over my umbrella, and walked more slowly.

"Hallo, my good woman! Would you like a lift up the hill?" cried the driver; and my heart leapt up, for it was Laurence's voice.

"Ay, ay!" I grunted out, slowly; and waiting until the cart came up to me, I climbed, with his help, and with seeming difficulty, carefully keeping my cloak over my hands, on to the seat by his side.

"All right!" said he; and again I grunted "Ay, ay!" and on we went.

Oh how happy I felt to be again by his side!

I began to get impatient for him to know me. I looked at him furtively; and presently to my exceeding comfort, he pulled down over his wrists two little uncomfortable woolen cuffs that I had made, and that he had bought of me at the sale. It seemed to me that he handled them lovingly.

"Aren't you going to talk?" said I, in my natural voice.

He gave the reins such a jerk that the horse stopped.

"You won't be cross with me again, will you?" said I.

He slipped the reins into his right hand and put his other arm around me, and kissed me, and he told me his. His father was up to me, I swear it, and he told me his. His father was up to me, I swear it, and he told me his.

CHAPTER XX.

During the whole of the drive back to Geldham it was old Mr. Reade who talked to me, and not Laurence. When we got to the gate of the Alders, he jumped out and carefully lifted me down, telling his father to drive on home as he came inside the gate with me.

"Violet," he said, very gravely, "I am afraid I have been foolish in agreeing with my father's wishes, and I am more and more anxious about you than I can tell. And now I am tortured and torn between you and your father, and I don't know what to do. I don't even write to you openly, and if I enclose letters to you to the house and ask for me—"

"Listen, Violet," he interrupted. "If you do not see me to-morrow night before seven o'clock, be at your 'nest' without fail at half-past."

"Very well, I will, Laurence—I will. I promise."

"But nothing would reassure him."

"I tell you it will be of no use, my darling—of no use. We must say good-bye to-night, for I shall not see you again."

and he should call again to see her in the morning; and he then told the coachman to drive on.

Laurence flung his arms round me.

"Now listen, my darling. Don't trust anybody while I am away, and don't believe what anybody may tell you about me. And, if you get no letters, and they tell you I am dead—"

"Oh, Laurence, don't!"

"Why, that will be a life! I shall be alive and single all the next six weeks, and at the end of that time I shall come back and marry you; and, if you want me, I shall come back before my own darling! Good-bye, good-bye!"

I stopped for a moment, and clung to a birch-tree for support while I dried my eyes before presenting myself at the front door.

But, just as I was going to leave the shelter of the trees, I saw in the gloom a figure making its way across the lawn toward the back of the house. I could only see that it was a man, and that he was carrying what looked like a small trunk; and it seemed heavy.

Who could it be at this time of night! Was it Tom Parks paying a late visit to Sarah, knowing the master was away? I waited, trembling, and in a few minutes had the satisfaction of seeing him reappear, followed by Sarah. And the cloud having passed over the face of the moon, I saw that it was indeed Tom Parks.

They disappeared up the stable path, and I took the opportunity to dart across the gravel-space to the front door and ring as gently as I could. Jane came down in a few minutes, very sleepy, and let me in.

I told her to go to bed as fast as she could; and when I had seen her into the nursery, I went softly to the head of the kitchen stairs. The side-door by which Sarah and Mr. Rayner used to go to any of the stables was ajar, and just inside was a small old brown portmanteau. As I held my candle over my head and peered at it curiously, it struck me that I had seen it before somewhere. Then I turned and fled guiltily up-stairs to my room. Haldee was sleeping, and looked less feverish than when I went away. I was very tired, and the moment I laid my head on my pillow I fell soundly asleep, and did not wake until the morning.

Haldee was already awake, and undoubtedly better.

"How did you sleep, darling?" said I, sitting on the bed and kissing her.

"Oh, beautifully, Miss Christie! I hardly ever woke up once; I should like to be up here always. I think I should have nice dreams up here, not like the ones I have downstairs."

"You shall stay up here till you are quite well again, darling," said I, inwardly resolving to beg that she might sleep in my room permanently.

I had all my meals by myself that day, except tea, which I had up-stairs with Haldee, for Sarah said Mrs. Rayner was too unwell to leave her room. I sat up-stairs by my pupil's bedside, in high spirits at the thought of Laurence's expected visit. At last I heard the front-door bell ring, and, after a few minutes' breathless waiting, I ran down-stairs.

"Who was that, Sarah?" asked I.

"Only one of Gregson's boys asking for Mr. Rayner, miss."

Strange that Gregson's boys should come to the front door, I thought. It was half-past six, and at half-past seven I was to be at my "nest," if Laurence had not come before. When the hands of the schoolroom clock pointed to twenty minutes past, I dashed into the garden, through the plantation toward my "nest."

Laurence was not there! And, as I stood wondering, I heard the church-clock strike eight. A bit of paper half hidden in the grass caught my eye. On it was scrawled in pencil, in Laurence's hand-writing—

"Good-bye, my darling! Remember what I proposed last night. I called at the Alders at seven, and was told by Sarah that you were tired out with watching by Haldee, and were asleep. I come here to-night, and you are not here. I know it is a trick, and I know who is at the bottom of it. When I left you last night, there were two men in a cart outside the stable-gate of the Alders. If anything happens, write to me at the following address—"

Then followed the address, and the scrawl ended with—"I have spoken to Mrs. Manners. Good-bye, my darling! Your devotedly loving,

CHAPTER XXI.

Sarah must have put the schoolroom clock back. I had found her just now turning from the mantel-piece, and I could not doubt that, her object being gained, she had been putting the clock right again. This malicious persecution of me would take so much trouble merely to prevent my having a last interview with my lover!

The next morning I received a letter from Mr. Rayner. He had been to the Gaiety Theater on the very night of his arrival in town, and sent me a crumpled programme of the performance. He said he had written to Mrs. Rayner, and sent his love to Haldee by her, but that he enclosed a second portion to me to give her, as she was not well. Then he gave me a message to deliver to Sarah—

"Tell Sarah not to forget the work she has to do in my absence."

As I looked up after reading this out to her, I saw that her face had turned quite livid; the old hatred of me gleamed in her eyes, and I wished Mr. Rayner had written to her himself, instead of making me deliver a message which appeared so distasteful to her.

She said, "Very well, miss;" and I wondered what work it was.

It was about four o'clock in the afternoon. There were scarcely any flowers left now, but by wandering into remote nooks of the garden, I managed to collect enough for a very fair October bouquet. I took them into the house, when I saw there was a gentleman standing at the window, looking out into the garden. It was Mr. Carruthers.

"I told me you were out."

"No; I was only in the garden."

"You are looking very well. I am afraid," said he, still holding my hand, "you have not been missing any of us much."

"Well, you see I had known the people there only two days," said I, seriously.

"The people there! As if I cared how little you missed 'the people there!' When I say you have not been missing any of us, I mean you have not been missing me."

"But I haven't known you longer than the others," said I, smiling.

"Well, don't you want to know what has been going on at Denham Court?" he asked rather suddenly, in a different tone.

"Oh, yes! But there has not been time for much to happen."

"There has been time for a very serious misfortune to happen. Last night Denham Court was broken into, and Lady Mills and Mrs. Cunningham and Mrs. Carew and some of the other ladies had all their most valuable jewelry stolen; and a quantity of gold plate was taken too. It was Lady Mills' maid who first gave the alarm by a cry at sight of the open window when she went into the dressing-room this morning, after calling her mistress. Lady Mills ran in; they looked out together, two doors; the ladder lying underneath. The dressing-room has been unlocked and left open by the thief, to pass into the house. The dressing-case was locked, nothing seemed to have been disturbed in which Lady Mills kept the greater part of her jewels was still in the locked-up wardrobe. But, on moving it, they found that the lock had been burst open, and it was entirely empty. Jewels, cases and all, had disappeared. By this time the head-jardener had come into the house saying that he hoped all was well, but that he had gone to the tool-house in the morning with one of the under-gardeners, a man named Parkes—"

[TO BE CONTINUED.]

**Prayer in the Desert.**

BY W. MULLER.

The fashion of the thought of the day is to make a good deal of the value of religions outside of Christianity. Mohammedism has had its share of high praise. Its good points have been dwelt upon with a complacency and unction which suggests a deprecatory sentiment towards Christianity, and of the judgment which places the Bible on the same shelf with the Vedas, the Zend Avesta, and the Koran. Undoubtedly Islamism has something to say for itself. It is a step above savage polytheism and the groveling conceptions of fetichism, though whether it is much less blood-thirsty may well be a matter of question.

The spirit of devotion which our picture illustrates is one of the most marked characteristics of Mohammedanism. It meets the traveler everywhere in the East. In the cities, where five times a day the sonorous chant of the muezzins sounds down from the height of the minarets, stopping business in the midst of its midday din; or with striking poetical force breathes the stillness of the night, summoning the faithful to spread his prayer carpet, to wash his hands and face, his ears and feet, and devoutly repeat the appointed portions from the Revealed Book marked out by the Prophet for the faithful. Or perhaps, as here illustrated, are to be seen travelers in the desert, by long-trained habit instinctively aware of the sacred hours, pausing on their way and, with faces turned towards Mecca, performing their orisons, neglecting no rite, however urgent their mission. In the desert, dry dust or sand takes the place of water for the necessary ablutions.

Frequent prostrations mark the progress of the prayers, and the solemnity, the decorum, the unaffected solemnity, the zeal and all-absorbing devotion which, as a rule, mark these times of Islamic worship have been held up, not unjustly, as an example to other creeds. All this gives us the pictorial and impressive side of a religion that claims the faith of a hundred and fifty-five millions of the human race. But when we seek for its highest achievements in promoting the welfare of mankind after a career of thirteen centuries, the results present as somber and hopeless a spectacle as the kingdom of Hades. It is destitute of any element of progress, and the horrid tragedy it presents to the world at the close of the Nineteenth century, of cool, remorseless blood-thirstiness, of blind and sullen fanaticism, without a single redeeming element, writes its final condemnation on the pages of the world's history. Whether the spectacle of the Christian world so long standing impotently by while a whole race of its creed is being exterminated with as fiendish barbarity as ever blackened the records of the past is not an ominous condemnation of its vitality might well be made a serious consideration. Something might be said on the score of a horror of war and the plea of the aid of humanity, considering the interests of far larger numbers that might be imperiled by interference. But if the mutual jealousies of the Christian world shall much longer prevent them uniting in a common purpose to shield their brethren, it needs no prophetic foresight to foretell as great a catalysis as ever brought chaos on the Old World.

**THE CHILDREN'S CORNER.**

**Troubled.**

Nobody saw me do it,  
Nobody came that way,  
When I found the box on the closet shelf  
Where the cakes for supper lay.

Nobody told me not to,  
Nobody knows but myself:  
But, O! I wish that cake I took  
Was back again on the shelf.

Nobody knows my trouble,  
Nobody ever would guess  
That a cake would cause a little girl  
So much unhappiness.

Nobody can tell mother  
Who took it from the shelf—  
But I know, before I go to sleep,  
I'll have to tell her myself!

**Our Fairy.**

There's a fairy lives in our house—  
Don't you wish you lived there too!—  
She is always full of comfort  
For everyone that's "blue."

She is so sympathetic!  
When you almost crack your head  
See'll bathe it with her sweet ointment;  
She'll sing when you're in bed.

If your horrid, dull old jack-knife  
Slip, and cuts your hand most off,  
She'll bind the wounds with saive and stuff;  
(She gives candy for a cough!)

If sometimes you are careless  
And tear your bestest clothes,  
The fairy's sorry for you;  
She finds her thread and sews

The holes up tight and handsome  
For anyone can soold.  
This fairy's very pretty,  
Though she's very, very old.

Her eyes are bright and snappy,  
And she's fond of every game,  
Though she wears a pair of spectacles  
And "Grandma" is her name.

**The Snail's Advice.**

It was a pleasant afternoon and the Snail was taking a quiet stroll across the garden path with the intention of reaching the wall beyond it. His slender horns moved gracefully from side to side as he stretched his supple neck far out of his shell to enjoy the sun as he went on his journey. Suddenly he found himself snatched from the ground and a finger laid on one of his bright black eyes. Quick as thought, folding his eyes into his horns, and his

"I know more than you think, for I see you here very often, though you don't see me. And I tell you that you wouldn't think people or things half so disagreeable if you didn't keep thinking about what they have said or done to vex you. Just fold up your horns, and even when your brothers try to make you put them out by calling you names, do as I did when you called to me to put out my horns—just don't answer one word, shut up your eyes to everything that vexes you, curl in your horns, and you'll get on ever so much happier.

"I like what you say," sighed the little girl.  
"Perhaps I'll try. I'm sorry I hurt you."  
"Oh, I'm all right again. You see, you might have hurt me much more if I had looked out when you called me."

**UNCLE TOM'S DEPARTMENT.**

MY DEAR NEPHEWS AND NIECES,—

I have heard that a sure sign of spring is to be able to get close enough to a frog to touch it with a stick, but we need no such warning of the advent of that welcome season, for an infallible indication (the ubiquitous small boy with his marbles) is everywhere in evidence, but especially on the street corners, where "Jack in the bush," "ring law," etc., are the games of the hour.

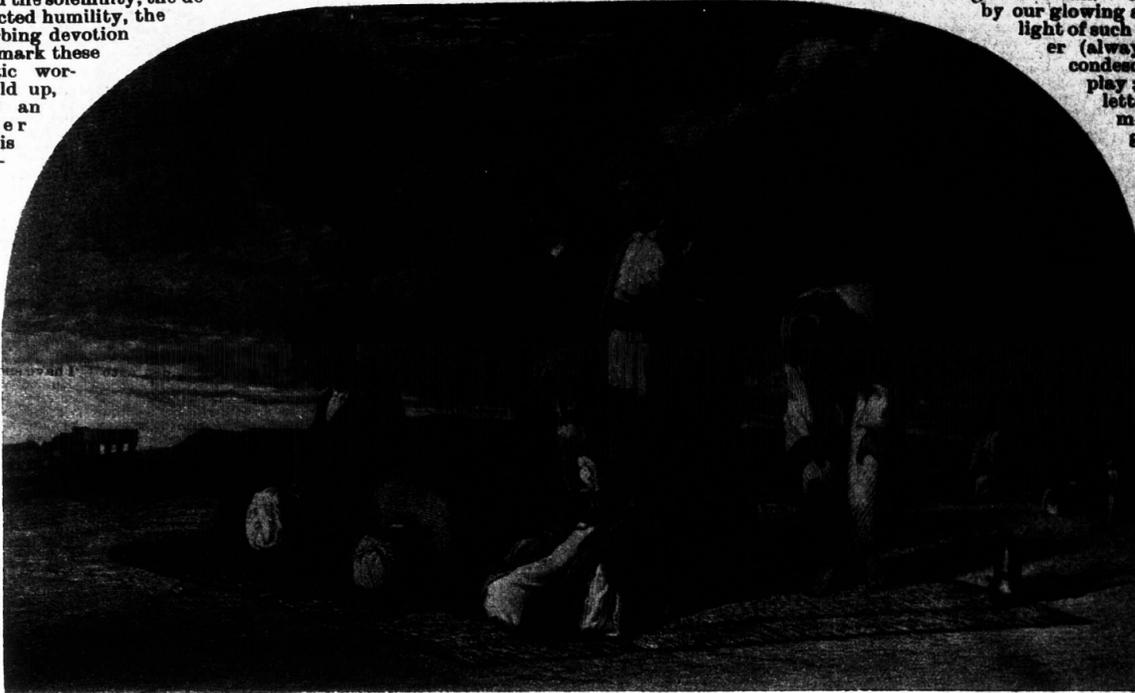
It recalls the old childhood days when we children, tired of the winter games, would diligently search our playground and the adjoining fields to find a spot of ground where part of old mother earth's white robe had injudiciously melted away a little ahead of time, and how we did enjoy the first game of ball. Occasionally, lured by our glowing accounts of the delight of such pastime, the teacher (always a lady) would condescend to share our play; upon which red-letter occasions we mustered all our gallantry to do her honor, and were supremely happy. I presume our homely game would be scorned by any of the modern nines, but this I know, it was hearty and pleasant if not scientific. We did not sneeringly dub the girls "new women" when they shared our romps, for we were not a large crowd, and "free for all" was our motto.

Although those youthful joys have long since fled, I often mentally live them over again, and every bare-footed, freckle-faced country boy with bright eyes peeping mischievously from beneath a half-rimless hat will find a warm corner in my heart for the sake of "auld lang syne."

March! Why, the sturdy buckles will soon be adorned with glittering sap buckets, for the sugar-making season is at hand. Old Charlie, decorously moving along from tree to tree with his honeyed burden, and the light-hearted lads and lasses pitting impatiently to and fro, form a pleasing picture.

Apropos of pictures, I will attempt to describe a sunrise I lately witnessed, though no words of mine can give you an idea of a tithe of its beauty. At first as I looked out all around was still, the calm whiteness of the scene unbroken save by the rustic farm fences and the lacy outlines of the trees which grew beside them. Each tree possessed a misty beauty of its own, for during the night a hoar frost had enveloped everything, and the woods looked glorious laden with the aspenlike crystals. A deep gray cloud rested above the horizon, a flush of rose making the intervening space beautiful. Gradually the rosy hues spread and brightened till every fleecy cloudlet near glowed like a fleck of flame; and as I stood drinking in the loveliness of it all the golden sun crept up, and stealing forth bathed the half-sleeping world in glad some light.

With a half-breathed prayer I turned the entrancing view to the commonplace everyday duties, but the pleasant memory lingered and brightened each moment of that day. How lavish is the hand that planned such beauties for our earthly eyes, and how much greater must be that beauty which we are told "it hath not entered into the heart of man to conceive!"



PRAYER IN THE DESERT.

horns into his head, he drew back into the shelter of his shell.

"Snail, snail, put out your horns," sang out the little girl who had seized him, and in whose hands he now lay; but the snail lay close.

"Snail, snail, put out your horns," she sang again, impatiently, but in vain, for never a stir made the snail.

"Nasty, disagreeable, slimy thing! I hate you, and I hate everyone; every single person I know is disagreeable to-day," said the little girl, angrily throwing the snail on the grass.

"Little girl," said the Snail in a gentle voice, which sounded far away inside his shell, "if you were like me you would be happier. I don't mean to be disagreeable."

"Like you! Like a snail! I'd be very sorry."

"I don't mean in appearance, but if you would act as I do when you are vexed it would make you happier. When anyone hurts me, as you did just now, I just shut my eyes into my horns, and curl my horns into my head, and turn my head inside my body, and draw my body into my shell, and don't even look out to see what they are like, or give them another chance of annoying me. Why don't you do that?"

"How could I? I have no horns and no shell, and I couldn't possibly turn my head inside my body."

"I know that; but you have got things that you are always keeping stretched out and that I think must be very like my horns, though you call them 'feelings' and 'pride,' and if you were to draw in your horns when you fancy someone has offended or vexed you, you would be much wiser."

"It is easy for you to talk; you are only a snail. You don't know how horrid the boys are, and mother won't let me do as I like."

I am pleased to see a revival of interest in the puzzle corner; it is principally in the original contributions. Very few send answers, which is the easier part. Our old friend Charlie Edwards very generously offers to withdraw from the competition for prizes, but promises to contribute regularly. Charlie does this to encourage new workers, and I hope many will manifest their appreciation by adding their contributions.

Yours lovingly,  
UNCLE TOM.

Puzzles.

1-NUMERICAL.

My whole is a fruit  
My parts are out where  
123 a boy's name  
Not very rare.

4 32156 for the victor.  
Don't give it up;  
45 last you will win  
And take off the cup.

Wm. S. Banks.

2-ANAGRAM.

As many a "path I ride" along  
Beneath an April sun,  
I breathe new life from the wild-wood song  
As 'the squirrels' wild rush of fun.

Long past is the day I felt as gay,  
When hastening to the town;  
But now the "dot" is blown far away,  
I laugh the sadness down.

For who could be sad in the Springtime  
Of all the rolling year!  
Oh, who could be sad in the Springtime,  
No matter what the cheer!

CLARA ROBINSON.

3-GEOGRAPHICAL PUZZLE.

DEAR COUSIN, - I again seek the (lake in N.-W. Territories) (lake in Pacific Ocean) of my cousin.  
I have become (a lake in Ont.) during my (lake in Assiniboia) absence from this (town in Australia) of Punsledom, and I now wish to join Uncle Tom's happy (lake in Manitoba) again.  
I see that Miss Lily Day and C. S. Edwards still work with (a bay in Newfoundland), and (island S. of Australia) all others. Their (islands in Pacific Ocean) faces inspire me with a (cape in Newfoundland) of (a town in U. S.).  
Let us therefore help the ADVOCATE with a true (river in U. S.) (islands in Pacific Ocean) way of puzzling, and that our many (note in Australia) ways of puzzling, and that our puzzles, whether (lakes in Canada) or (a river in Newfoundland) will help to (harbor in Newfoundland) our corner.

Wm. S. Banks.

4-TRANSPPOSITION.

The farmer sows his field of grain  
And other crops in time,  
He cannot FIRST a leisure hour  
Till o'er is seeding time.

His wife is just as busy, too,  
With household cares on mind,  
She TREES her stock of juicy two  
Or crisp brown coffee grinds.

When harvest comes he FOUR his crop,  
Mid cheerful song and shout;  
He tells along from sun to sun  
Till stars come peeping out.

A PUZZLISTIC COUSIN.

5-NUMERICAL ENIGMA.

My 1, 2, 3, 4, 5 is the bone in the back.  
My 6, 7, 8, 9 is to look like.  
My 12, 11, 10, 13 is mature.  
My total is a great empire.

6-CROSS-WORD ENIGMA.

MY FIRST is in grate, but not in ekate;  
MY SECOND is in air, and also in stair;  
MY THIRD is in night, but not in dark;  
MY FOURTH is in ancient, but not in old;  
MY FIFTH is in tired, but not in rest;  
MY SIXTH is in aunt, but not in uncle;  
MY SEVENTH is a country you all know well.

HATTIE MACDONALD.

7-SYNCOPIATIONS.

Take one letter from each word.  
To parboil a cabbage.  
Something drawn out or extended - Peculiar skill.  
A circuit - Life.  
A small shoot - Active.  
Boisterous, empty declamation - An animal.  
The horn of the moon - Part of a flower.  
To spend - a youth.  
To play at ombre - To propose.  
Syncooped letters - A famous explorer.

CLARA ROBINSON.

Answers to February 1st Puzzles.

- 1-Olympic.  
Right is right since God is God,  
And right the day must win;  
To doubt would be disloyalty,  
To falter would be sin.
- 3- In faith and hope the world will disagree,  
But all mankind's concern is charity.
- 4-Now - Won.
- 5-A light heart lives long.

Answers to February 1st Puzzles.

ADDISON M. SNIDER, J. S. CRERAR, ADA M. JACKSON, CLARA ROBINSON.  
The Illustrated Rebus in February 1st, credited to Lily Day, was the work of Charlie S. Edwards.

THE QUIET HOUR.

Through the Flood on Foot.

The sun had sunk in the West  
For a little while,  
The clouds which gathered to see him die  
Had caught his dying smile.  
We sat in the door of the tent  
In the cool of the day,  
Towards the quiet meadow  
Where the misty shadows lay.  
The great and terrible land  
Of wilderness and drought,  
Lay in the shadows behind us,  
For the Lord had brought us out,  
The great and terrible river,  
Though shrouded still from view,  
Lay in the shadows before us,  
But the Lord would hear us through,  
In the stillness and the starlight,  
In sight of the blessed land,  
We thought of the bygone desert life,  
And the burning, blinding sand.  
We were talking about the King,  
And our Elder Brother,  
As we used often to speak  
One to another.  
The Lord, standing quietly by,  
In the shadows dim,  
Smiling, perhaps, in the dark, to hear  
Our sweet, sweet talk of Him.  
"I think in a little while,"  
I said at length,  
"We shall see His face in the city  
Of everlasting glory of the night,  
And sit down under the shadow  
Of His smile,  
With great delight and thanksgiving,  
To rest awhile."  
But the river - the awful river,  
In the dying light,  
And, as he spoke, the murderer  
Of a river rose on the night  
And one came up through the meadow  
Where the mists lay dim;  
Till he stood by my friend in the starlight,  
And spoke to him:  
"I have come to call thee home,"  
Said our venerated Guest,  
"The terrible journey of thy life is done;  
I will take thee into rest.  
Arise! thou shalt come to the palace,  
To rest thee forever."  
And he pointed across the meadow,  
And down to the river.

My friend rose up in the shadows,  
And turned to me,  
"Be of good cheer," I said faintly,  
"For He calleth Thee."  
For I knew by His loving voice,  
His kindly word,  
The veiled Guest in the starlight dim  
Was Christ the Lord,  
So we three went slowly down  
To the riverside,  
Till we stood in the heavy shadows  
By the black, wild tide,  
I could hear that the Lord was speaking  
Deep words of grace:  
I could see their blessed reflection  
On my friend's pale face.  
The strong and desolate tide  
Was hurrying wildly past,  
As he turned to take my hand once more,  
And say Farewell, at last.  
"Farewell! I cannot fear;  
Oh, seeest thou His grace?"  
And even as he spoke, he turned  
Again to the Master's face.  
So they two went closer down  
To the river side,  
And stood in the heavy shadows  
By the black, wild tide,  
But when the feet of the Lord  
Were come to the waters dim,  
They rose to stand on either hand,  
And left a path for Him.  
So they two passed over swiftly  
Towards the goal;  
But the wistful, longing gaze  
Of the passing soul  
Grew only more rapt and joyful  
As he clasped his Master's hand,  
I think, or ever he was aware,  
They were come to the Holy Land.  
Now I sit alone in my tent  
In the cool of the day,  
Towards the quiet meadow  
Where the misty shadows play;  
The great and terrible land  
Of wilderness and drought  
Lies in the shadows behind me,  
For the Lord hath brought me out,  
The great and terrible river  
I stood that night to view,  
Lies in the shadows before me -  
But the Lord will bear me through.

-B. M.

Asleep.

O gift of God! O perfect peace:  
Where angel hands touched cheek and brow,  
All pain and trace of trouble cease:  
No cares of earth vex our friend now.  
Rests on his lips a look most sweet,  
As if he smiling fell asleep;  
Then do you think, dear friends, 'tis meet,  
That we should henceforth grieve and weep!

We cannot wake him if we would,  
He heareth not our cries and tears,  
We dare not wake him if we could,  
To feel again earth's ills and fears.  
He toiled and suffered till life's close,  
How sweet the thought, he is at rest!  
In peaceful, undisturbed repose,  
We fold his hands upon his breast.

What better gift than this can be,  
He giveth his beloved sleep!  
O words of love and mystery!  
Blest fount of comfort, full and deep,  
The fringed lids veil tender eyes,  
Whose loving glance we thrilled to see,  
How bright the way behind us lies,  
The path we walked in company!

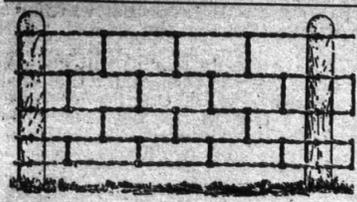
Yet how unreal, and strange it seems,  
That we should live while he is dead,  
We grope like one in mists of dreams,  
God grant we may be comforted;  
That while we miss from out our home  
The notes whose music death hath stilled,  
That we may say that it is well,  
For thus it was the Father willed.

-A. M. Bartow.

100 BEST EVERGREEN SEEDLINGS

delivered free by mail, only \$1. 100 best evergreens 3 to 6 ft. delivered east of Rocky Mts. only \$1.00. Write for free catalogue and price list a 50 big bargains, selections from complete nursery stock. Cash paid for getting up clubs or to salesmen with or without experience. Address

D. HILL  
EVERGREEN SPECIALIST, DUNDEE, ILL.



We can out your 1897 fence account just in half. We claim we have the most practical fence on earth. Four miles of it in use at the Experimental Farm, Guelph. Send for prices.

TORONTO PICKET WIRE FENCE CO.,  
221 RIVER STREET,  
TORONTO, ONTARIO.

AUCTION SALE!

I have decided to sell by public auction my entire herd of Shorthorns (about 25 head) on the 14th of April next. Further particulars in later issue. Catalogues will be ready by March 15th, 1897, and will be mailed to all applying for them. Address

R. R. SANGSTER,  
LANCASTER, ONT.

Farm to Rent or For Sale

100 acres, lot 20, 7th concession of Westminster, Middlesex County, half way between St. Thomas and London. Possession April 1st. Fall wheat sown. Hunt Bros., LONDON, ONT.

GOSSIP.

ES In writing to advertisers, mention the "Farmer's Advocate."

A young, single man who understands all classes of stock, wants a position in a sale, raising or private stable. See "Advertiser" ad.

R. G. Robinson, Elbow Park Ranch, Calgary, passed through Winnipeg recently with a carload of 23 head of yearling Shorthorn bulls for use on his own ranch. He bought the lot in Ontario, shipping from Claremont, and a right fellow that cannot help but improve the quality of the herds upon which they are used. Mr. Robinson expressed himself as well pleased with the treatment accorded him by the C. P. R. authorities; they were rushing his car through with all speed and comfort.

S. J. Pearson & Son, Meadowvale, Ontario, write: "Our Shorthorns are coming through the winter in good condition. Our calves, sired by British Statesman (Imp.) are a fine lot, we think the best we have had yet. The demand for Shorthorn bulls is good, having sold all our yearlings. Our Berkshires have done well, and the demand is good. Among the recent sales are two sows to Andrew Graham, Pomeroy, Man.; two sows and two hogs to R. Johnston, Belle River, Ont.; one sow and hog to E. H. Bull & Son, Brampton, Ont.; one sow to P. A. Brown, Streetsville, Ont.; two sows to Thos. McDowell, Streetsville, Ont.; one sow to R. A. Wood, Toronto; and a pair, to T. A. McClure, Meadowvale, Ont."

Alex. Hume & Co., Burnbrae, writes: "We sold our aged bull Sir Colin, through the ADVOCATE, to H. S. Hunter, Smith's Falls, and we trust that he may sire for him a good individual as he has left us. Mr. Hunter, on receipt of him, writes: 'We are well pleased with him. He is all you represented him to be. The outlook for the dairy looks better than it has done for years, which ought to stimulate dairymen to secure the best dairy stock, especially bulls. Our cows begin to drop their calves March 1st, and we will have more calves of both sexes than we intend to raise, start to lay the foundation of a dairy herd at about a year old to part with, of the true dairy type. We have also sold a young sow to Wm. Rennie, Menie, and another to Wm. Connell, Lindsay. We could still fill an order or two for young sows."

THE TORONTO SPRING HORSE SHOW.

We have received, from Secretary Wade, an advance draft of the prize list for the spring show too late for extended notice in this issue. The prize list is a liberal one, with the usual extended classification, and prizes running from \$20 to \$75. The date of the show is April 29th and 30th, and May 1st. Entries close April 17th. Prize lists can be secured by sending a post-card to Henry Wade, Parliament Building, Toronto.

BOOK TABLE.

A. W. Livingston & Sons, Columbus, Ohio, U. S. A., claim themselves to be the largest growers of tomato seed in the world. The seeds bear handsome and tempting representations of 14 varieties improved tomatoes, one of which, the "Honor Bright," a new sort, is pronounced a grand, good tomato, decidedly distinct from all others. They sell packages of this sort for 15 cents each, or two for 25 cents. The catalogue is well gotten up, containing descriptions, illustrations, and prices of good varieties of farm and garden vegetables, corn and flower seeds.

Among the annual seed catalogues received is that of Harry N. Hammond, Decatur, Mich., U. S. A. This firm evidently pays special attention to the growing of potatoes for seed, as the extensive catalogue issued is largely good sorts. Oats, dent and sweet corn, peas, beans, buck wheat, and millet also receive attention, as well as the different clovers.

VEGETABLES ON THE FARM.  
Three years ago Prof. Samuel Green, Professor of Horticulture, in the University of Minnesota, published a little work called "Amateur Fruit Growing" as a help to his class-room work in the School of Agriculture. It was so favorably received that he has been encouraged to issue a more pretentious volume which we have received from the Webb Publishing Co., St. Paul, Minn. While this book was written for the latitude of St. Paul and Minneapolis, Minn., (45 degrees N. L.), being especially intended for the western States, it is really applicable in the main to a very large area of the Continent. It contains some 224 pages, embellished with 115 illustrations, and is certainly one of the most complete and useful volumes we have seen, nearly everything being serviceable for the farm garden. We are very much pleased with the volume, and

must congratulate Prof. Green upon it. The following list of contents will give our readers a good idea of the work:

Soil and Location	Peppers	Potato
Irrigation and rotation	Pumpkin	Radish
Manures	Rhubarb	Rutabaga
Seed Sowing	Salsify	Spinach
Transplanting	Squash	
Kitchen Garden	Strawberry Tomato	
Seeds and Seed Growing	Tomatoes	Turnips
Glass Structures	Table - Amount of Seed required to sow an acre	
Injurious Insects	Table - Average time required for Seed to germinate	
Asparagus	Vitality of merchantable Seeds in percentages	
Beans	Very full index by subjects	
Cabbages	Table giving number of seeds in one ounce and weight of a quart of seeds in ounces	
Carrots	Monthly Calendar	
Cauliflower		
Celery		
Endive		
Kale		
Garden Herbs		
Muskmelon		
Mushroom		
Onion		
Okra		
Parsley		
Parsnip		
Table - Longevity of Garden Seeds		

Copies may be ordered from this office at \$1.25 each, or we will give one copy to anyone sending us the names of three new paid subscribers to the FARMER'S ADVOCATE.

The Spramator Co., of London, Ont., have issued their 1897 annual catalogue and treatise, which, as a book of reference to the methods of a successful battle with insects, surpasses anything of its sort we have noticed. Some 31 pages of the 64 are devoted exclusively to treatise, which, if carefully studied by fruit growers, should do them an extraordinary amount of good in fitting them to get crops that would fall through ignorance. The catalogue, which is profusely illustrated and alphabetically indexed, can be secured by sending a three-cent stamp, with your address, to the Spramator Co., London, Ont. Among the many testimonials are those of the Hon. John Dryden, Minister of Agriculture; A. H. Pettit & Son, Grimsby; A. McNeil, Windsor, and other equally prominent fruit-growers.

Wanted - Position with stock farm, country place, sale, racing, or private stable. Young man, single; understands horses, cattle, sheep, poultry and garden; ten years' experience with horses of all classes; good rider and driver. References. Address: ACTIVE, Box 823, MONTREAL, QUE.

**For Sale or To Rent** (WITH OR WITHOUT RETAIL MILK AND CREAM BUSINESS), 150 acres, near Brantford; No. 1 land; stabling; windmill, silo, and Henry brick house, furnace, etc. Prices and Terms to suit the times. Milk and cream taken for rent or interest if desired; the best opening in Canada for live Dairyman with established wholesale or retail trade.

Address DAIRYMAN, Box 557, London, Ont.

**GRAND DISPERSION SALE**  
The entire herd of  
**High-Class Shorthorns**  
To be sold at Auction  
**Tuesday, April 6th, 1897,**

At MOSBORO STATION, G. T. R. (5 miles west of Guelph).  
I will close out to the highest bidder, without reserve, my entire herd, some  
**50 HEAD** of blocky, thick-fleshed Cattle in fine condition.

TERMS: Eight months, on approved notes. Five per cent. per annum off for cash.  
SALE TO COMMENCE AT 1 P. M. Catalogues ready early in March. Send for one.

**John Smith, M.P.P.,** Auctioneer, BRAMPTON, ONT.  
**John I. Hobson,** Mosboro P. O., Ont.

**ATTRACTIVE....**  
Public Sale of **SHORTHORNS**  
At Maple Lodge Stock Farm  
ON **THURSDAY, 25th MARCH, 1897.**

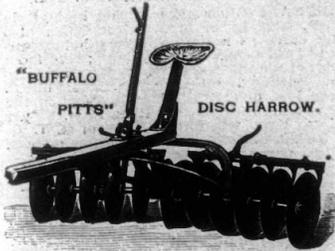
We have instructed Capt. T. E. Robson to sell for us, as above, by public auction, TWENTY CHOICE SHORTHORNS. One half the number will be young bulls of exceptional quality, sired by British Flag (by Barmpton Hero) and the champion show bull, Abbottsford. The cows and heifers are young, in fine condition, and male and female are drawn largely from our best milking strains. Also include some very promising show material. The whole offering is a good representative draft from our herds, which we trust is sufficient guarantee of their excellence.  
Send for CATALOGUE with full particulars, and come to our sale.

**JAS. S. SMITH,** H. & W. SMITH,  
Maple Lodge P. O., Ont. Hay P. O., Ont.

THE LATEST IMPROVED AND BEST LINE OF ALL

**Steel Harrows**

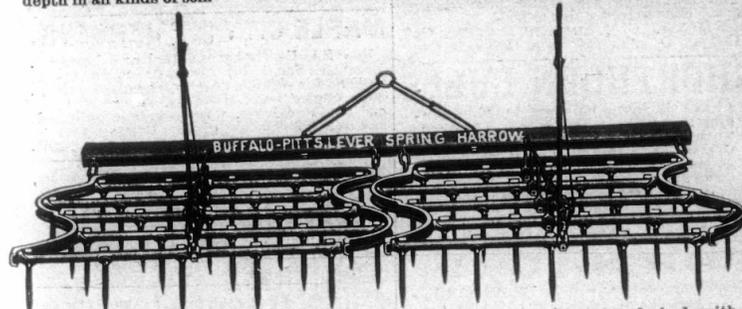
MADE IN CANADA.



**Noxon Steel Disc Harrow.**  
The only Disc Harrow made with lever for controlling spring pressure upon inner ends of gangs to cause them to cut a uniform depth in all kinds of soil.



The lightest and strongest, perfect floating  
**Spring Tooth Harrow**  
made, supplied with safety relieving spring and lever for instantly regulating depth.



Supplied in two or three sections of 50 or 75 teeth as desired, with lever for instantly changing angle of teeth to enter hard ground or freeing from rubbish. Safety relieving spring to prevent jumping or injury from fixed obstacles.  
**Noxon Bros. Mfg. Co., Ltd.,** INGERSOLL, ONTARIO.

**MAMMOTH BRONZE TURKEYS,**  
**SILVER-GRAY DORKINGS,**  
**BLACK MINORCAS,**  
**BROWN LEGHORNS,**

Eggs of all, except Turkeys, \$1.00 per 13. All winning strains. Pairs mated not akin.  
**T. & H. SHORE,** White Oak, Ont.



**THE BUSINESS HEN**  
has enough to occupy the word with eggs, and no time to hatch chicks. That important branch of the poultry industry should be left to the **MONITOR INCUBATOR** which has no superior for the purpose it is designed.  
**A. F. WILLIAMS**  
It takes an 8 DE. catalogue to tell all about it. - Sent for 4c. in stamps. 134 Race St., Bristol, Conn.

**GOSSIP.**

In writing to advertisers, mention the "Farmer's Advocate."

**MR. HOBSON'S SHORTHORNS.**  
The announcement of the Dispersion Sale of the fine herd of Shorthorns of Mr. John I. Hobson, on the 6th of April, at the farm at Mosborough Station, on the Grand Trunk Railway, five miles west of Guelph, is one in which a very large circle of farmers and stockmen throughout the Dominion and the United States will be deeply interested. Mr. Hobson has been an ardent and enthusiastic admirer of this his favorite breed of cattle, and has by careful selection and breeding, succeeded in building up one of the most useful herds in the country. He has not been a blind follower of any cast-iron formula of line breeding, and has not pinned his faith to paper pedigrees, his motto having been to paper merit first, and a good sound pedigree always. These he has succeeded in combining in a high degree, and the cattle he will place under the hammer on the 6th of April at this closing out sale are such as we feel sure will meet the expectations of intending purchasers and visitors. The outlook for the trade in good cattle is at present decidedly encouraging. Export steers have, we are told, been sold in the last month in the neighborhood of Guelph at \$5.12 1/2 per 100 pounds for May delivery, and very many more would have been taken at the price if they were available. The demand for young bulls has been very active for some time, several carloads having recently been taken to the Northwest country. The date of the sale is favorable to buyers, as the winter will be well over and the place is exceptionally convenient, the station being on the farm and within one minute's walk from the buildings. The proprietor is well known as a genial, generous and honorable man. The farm is sold. Mr. Hobson is retiring from business and everything offered will be sold without reserve, and will be fairly represented. It is safe to say it will be a clean sale. A recent visit to Mosborough and inspection of the cattle by one of our staff has left the impression that the prevailing ideas in the upbuilding of the herd has been that of usefulness, a judicious combining of size with smoothness, and good feeding and milking qualities. A noticeable feature in the herd is the absence of old or worn out cows, all are fresh looking and the majority are on the sunny side of the prime of life as to age. In variety of type, character and condition is another striking feature. All are healthy, and, while not by any means over done, are yet in fine condition, and there are no barren cows or doubtful breeders. Probably the oldest cow in the herd is the maternally imported Scotch-bred Cleopatra, coming ten, in March, bred at Kinellar and sired by a grand old Cruickshank bull of the name of "The Reporter." She is well preserved, a typical general purpose cow, combining beef and milking propensities, having a strong, straight back and long level quarters, with a shapely and well-balanced udder. She has two daughters to show, Cleopatra 2nd and 3rd, four and five years old, respectively, which do her credit; the former by imported "The Reporter," the other by "Premier 14388," a son of imported "Nutsunder" and of "Village Gem" of one of the best Cruickshank families. Cleopatra 3rd ranks as one of the best individual cows in the combination, and we have no doubt will be a prime favorite on the day of the sale, being long and level, bredy looking, with a fine coat of mossy hair and thick flesh. Aggie Ury, a charming five-year-old cow of Scotch breeding, by Gen. Booth, imported, is a fine representative of one of the best families in the late Kinellar herd; she is true to the type of north country cattle, and has a very promising red and white daughter, Aggie Ury 2nd, by imported Golden Crown (64088), which should prove an attractive number. Perhaps one of the most popular cows in the herd will be the red four-year-old Lovely Gem, by imported Duke of Lavender (51125), a granddaughter of the fine old imported Cruickshank cow Lovely 19th, one of the most useful cows that ever came to Canada; she lives and bred till she was in her eighth year. There is a very useful representative of the famous Duchesses of Gloucester family in the rich roan four-year-old daughter of imported Duke of Lavender, "Duchess of Gloucester A," out of the twentieth of that name, by imported Lord Abbot (64385). This is considered one of the most desirable of Cruickshank families, and has produced many notable animals in Shorthorn history. A fine show cow and a regular breeder is the large red five-year-old Starlight, by 20th Duke of Sylvan by imported Warrior, tracing to imported Lady Florence by Julius Caesar, and founded on one of the best old Scotch families. She is a massive cow with straight lines, long level quarters and fine quality, and has a good show of prize tickets to her credit. White Socks, a red and white four-year-old, due to calve before the sale, a daughter of the Premier and of Lady's Pride, who was a granddaughter of imported Lady Florence by Julius Caesar, is a show cow in any company, and is one of the most interesting numbers in the catalogue. Ada 2nd, by imported Reporter out of Ada by imported Premier Earl, is a large and thickly-fleshed cow with four top crosses of imported bulls on a sound foundation stock, and has proved a specially good breeder. Queen and Muriel are a pair of thick-fleshed, fine pattern; low set, level and thick-fleshed. Another pair of similar type are the twin sisters Cherry Bloom 13th and 14th, by the Premier, a grand-on of the well known sweepstake bull imported Vice Consul, bred by Mr. Cruickshank. Space will not admit of detailed reference to each of the score or more young cows in the catalogue. A number of the dozen and one charming two-year-old heifers carrying their first calves and coming into profit before they have to be paid for; suffice it to say they are the right sort, uniform in type, low set, blocky, thick-fleshed and covered with mossy coats of hair. They give fair promise of living long and useful lives. A half-dozen yearling heifers following these are of similar character, sons and daughters of the fine old sweepstake bull, War Eagle, are as promising a lot as one often sees together. The list of bulls includes War Eagle = 13015 =, in his seven-year-old form, and he is well preserved for a bull that was fed and well preserved for a several years, where he made his mark high up on the honor roll, winning in first-class company the highest prizes offered at the Toronto Industrial and other leading shows, including the sweepstakes at Toronto, a son of imported Warfare and a grandson of imported Duke of Lavender he comes honestly by his merits and gets it, not by accident, but by inheritance. He is true to the type of the modern ideal beef-producing Shorthorn; short legged, deep ribbed, thick-fleshed, and full of quality. Associated with War Eagle as a stock bull is Royal Standard 23381, a son of British Flag of Flower family, and a grandson of the famous old Barmpton Hero, proprietor of a long list of sweepstake winners from the provincial fairs to the Columbian Exposition. Royal Standard is a living illustration of the truth of the axioms "blood will tell" and "like begets like." The likeness of an ancestor. Shorthorn connoisseurs will recognize in him a striking likeness to the sire of Barmpton Hero, imported Royal Barmpton, one of the first and grandest of the Cruickshank bulls brought to Canada. The well sprung ribs, thickly covered back, full twist, wide chest, stylish carriage, and noble crest, are all reminders of his royal ancestor, whose excellencies have been handed down to the third and fourth generation. There are a few more useful young bulls such as the farmers ought to use to improve their stock and their profits.

**NOTICES.**

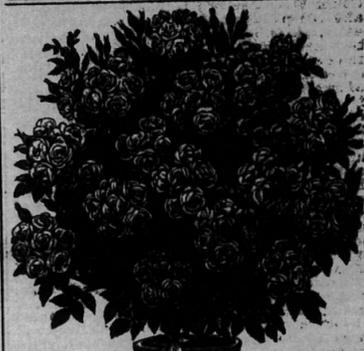
The illustrated advertisement in this issue of John Lewis Childs' new Multiflora Roses should interest many floriculturists.

Pure seed from a clean farm is the only sort that should be sown. For the benefit of readers we draw their attention to the different varieties of barley, oats, potatoes and red clover seed, advertised by Mr. Simson Rennie, Milliken, Ont. Mr. Rennie is a gold medal farmer.

The Improved Monitor Incubator, advertised in this issue, has been awarded many first premiums at the great American fairs. It is a well constructed and reliable machine, the heat regulator being accurate and reliable. The advertisement in this issue clipped and sent to the manufacturer, A. F. Williams, Bristol, Conn., will bring in return a large book of valuable information for poultry raisers.

The longer land is in cultivation the more it becomes consolidated under the ordinary system of farming, and in order to get good crops, as of old, not only has fertility to be applied, but the soil must be worked more than formerly, not with the plow by turning it over and over, but by implements which simply stir the soil. There can hardly be found a good farmer who does not agree with this teaching. To farm profitably, then, one must have proper implements. The disc harrow, which turns the soil upwards, is long past the experimental stage; in fact, most good farmers do not think of farming without one. The spring tooth harrow, when it can be readily adjusted as to depth, is also a necessary implement in successful tillage, and the straight toothed harrow is absolutely essential, and when this can be secured having levers by which the teeth can be slanted at any desired angle surely it is a great improvement on the old sort. The latest improvements in all these implements are the best. The Noxon Bros. Manufacturing Co., of Ingersoll, Ont., specialize in these lines as is shown in their advertisement in this issue.

**BEWARE OF CUT PRICES ON PLANET JR. GOODS.**  
The low price and extremely high quality of Planet Jr. Seed Drills are striking tributes to fine manufacturing. Beware of alleged cut prices, which are on old style machines or inferior substitutes, and send to any reputable seedsmen, or direct to S. L. Allen & Co., Philadelphia, Pa., for catalogue describing the numerous new Planet Jr. ideas for '97.



**NEW MULTIFLORA ROSES.**

With seed of these new Roses, plants may be had in bloom in 60 days from time of sowing. Plant at any time. They grow quickly and flowers appear in large clusters, and in such quantity that a plant looks like a bouquet. Perfectly hardy in the garden, where they bloom all summer. In pots they bloom both summer and winter. From a packet of seed one will get Roses of various colors - white, pink, crimson, etc. - no two alike, and mostly perfectly double and very sweet. Greatest novelty this year. **Fresh Seed 35c. per pkt.** - or for 40c. we will send

- 1 pkt. New Multiflora Roses. All colors.
- 1 " Moss Verbena. Exquisite novelty.
- 1 " Japanese Chrysanthemum. All colors.
- 1 " Weeping Palm. Highly ornamental.
- 2 " Fanny, 1 New Scarlet, 1 New Giant Mixed.
- 1 Resurrection Plant. A great curiosity.
- 1 bulb Spotted Calla. Exceedingly lovely.
- 1 " Montbretia. Intensely brilliant.
- 2 " Rain Lily, 1 Variegated Tuberosa.
- 6 " Fancy Gladiolus. All different colors.
- 10 " Oxalis. Mixed colors. Also.

Our great 144-page Catalogue, and the MAYFLOWER Monthly Magazine for a year (64 pages and colored plate each month, devoted to Flowers and Gardening). Worth \$1.50, but for trial

All the above for 40 cts., postpaid. Or send us 10c., and the names of 5 or 10 people who cultivate flowers and purchase seeds or plants and we will mail you pkt. Rose Seed and Catalogue.

**OUR CATALOGUE** of Flower and Vegetable Rare New Free is the finest ever issued; profusely illustrated. Several colored plates, 144 pages. Sent FREE to any who order or who expect to later.

**JOHN LEWIS CHILDS, Floral Park, N. Y.**

GOSSIP.

EF In writing to advertisers, mention the "Farmer's Advocate."

The C. P. R. have decided to erect a large cold storage building in Winnipeg, for the handling of dairy and other perishable products.

P. J. Cogswell, Proprietor of "Brighton Place" herd of Jersey, Rochester, N. Y., writes:

THE MAPLE LODGE SALE OF SHORTHORNS. An interesting feature of the public sale of high-class Shorthorns, advertised in this issue...

the same herd, which will be in the sale, is a daughter of Abbotsford and of Fragrance by Prince Albert of Mr. Dryden's fine old Lady Eden family...

W. G. PETTIT, BREEMAN, ONTARIO. BREEDER Shorthorns, Shropshires, and Berkshires OF...

5 YOUNG SHORTHORN BULLS Good enough to head breeders' herds, got by the show bull, Earl of Moray...

E. GAUNT & SONS, ST. HELEN'S, ONT. Lucknow Station, G. T. R., 3 miles from farm.

CARGILL HERD OF SHORTHORNS. We still have 3 extra good young bulls for sale...

SHORTHORNS! I have four beautiful young Shorthorns due to calve in Jan. to Perfection's Hero...

THE GRAND VALLEY STOCK FARM G. & W. GIER, Props. Grand Valley, Ont.

SHORTHORNS FOR SALE 18 Young bulls (12 red and 6 roan), also 20 red heifers...

Willow Bank Stock Farm 1855 to 1896. One of the oldest established herds in the Province...

SHORTHORN BULLS I have six young bulls, got by Aberdeen (imp); good ones.

FOR SALE! One yearling SHORTHORN BULL, two BERKSHIRE BOARS...

SHORTHORN BULLS I have six young bulls, got by Aberdeen (imp); good ones.

FOR SALE! Four young Bulls, three reds and one roan; also Heifers...

FOR SALE! The Scotch Shorthorn Bull, British Statesman (Imp.) (3729), is a first-class show bull...



JERSEYS FOR SALE - Young Cows and Heifers in calf, Heifer Calves and Bull Calves...

The Ettrick Herd of Jerseys. MESSRS. HUMPIDGE & LAIDLAW, Proprietors.

FOR SALE! A choice lot of Jersey Heifer Calves (pure bred and high grades)...

Exile of St. Lambert 18657 Founder of the great EXILE family of large milk and butter producers.

The Don Herd of Jerseys. Comprise the choicest strains obtainable, including St. Lambert, Tennessee and combination blood.

LEE FARM REGISTERED JERSEYS. 4 young Cows and Bull, 4 2-year-old Heifers and Bull...

MAPLE CITY HERD OF JERSEYS. FOR SALE - That grand stock and show bull, Massena's Son (17608)...

W. F. BACON, - Orillia, Ontario. CHOICE REGISTERED JERSEYS. Young bulls and heifers of the best blood for sale.

GLEN ROUGE JERSEYS. WILLIAM ROLPH, Markham, Ont., offers twelve Jersey Bulls and Heifers...

A. J. C. G. JERSEYS FOR SALE. Young cows and heifers in calf, heifer calves, bull calves...

ADVERTISE IN THE ADVOCATE. The Farmer's Advocate is the best medium for advertising farm products...

1897-1847 Not Since Adam Dug in the gardens around Eden has there been seen the peer of our 'JUBILEE' CATALOGUE for 1897.

Arthur Johnston, Greenwood P. O. and Telegraph Office. HAS FOR SALE AT EXCEEDINGLY LOW PRICES 17 EXTRA GOOD SHORTHORN BULLS 17



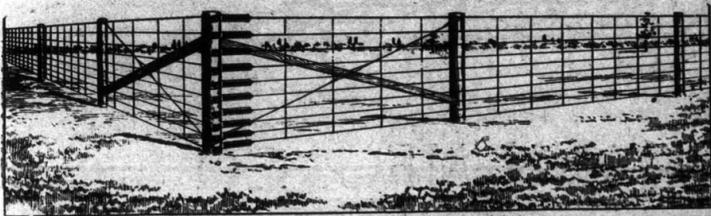
Cows and Heifers, the best we ever offered. Send for Catalogue and prices. Enquiries answered promptly.

MARCH 1, 1907. THE FARMER'S ADVOCATE. ADVERTISE IN THE ADVOCATE. The Farmer's Advocate is the best medium for advertising farm products...



The Page Woven Wire Fence and premises of Alex. St. Louis, near Walkerville. Use this fence, if you wish one that will be neat in appearance, and at the same time entirely stock-proof. Send to the Page Fence Co., Walkerville, Ont., for their literature, showing many such pictures as above. Sent free.

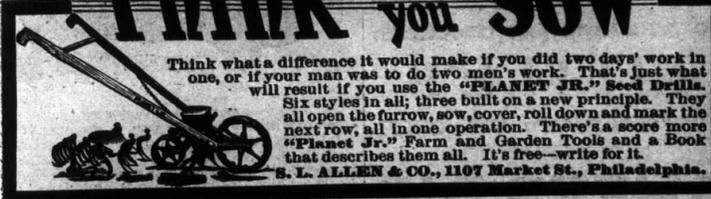
## Gem Fence.



THE GEM FENCE MACHINE is what every farmer should have. It will weave any size cross wire, large or small, on any kind of wire—Barb, Twisted, Braided or Plain, and so tight that cross wires cannot be shifted. Easily operated. Nothing to wear out or break. One man can weave 40 rods a day. Price of machine can be saved in 30 rods of fencing. Send for our fence paper.

McGregor, Banwell & Co., WINDSOR, ONT.

## Think before you SOW



Think what a difference it would make if you did two days' work in one, or if your man was to do two men's work. That's just what will result if you use the "PLANET JR." Seed Drill. Six styles in all; three built on a new principle. They all open the furrow, sow, cover, roll down and mark the next row, all in one operation. There's a score more "Planet Jr." Farm and Garden Tools and a Book that describes them all. It's free—write for it.

S. L. ALLEN & CO., 1107 Market St., Philadelphia.

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

## Ingleside Herefords.

UP-TO-DATE HERD OF CANADA!  
**Bull Calves**  
OF THE RIGHT SORT  
**For Sale.**  
Address—  
**FRED NORTON**  
(HERDSMAN),  
Compton, Que.

**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).

**A. & G. RICE.**  
Brookbank Stock Farms, CURRIE'S CROSS, ING, Oxford Co., Ont.

## "Gem Holstein Herd."

**STOCK FOR SALE!**  
We only keep and breed registered Holstein-Friesians. We have now some choice young bulls and heifers, also some older animals, all of the very best dairy quality, that we will sell, one or more at a time, on reasonable terms. Correspondence solicited.  
**HILLIS BROTHERS,**  
BEDFORD PARK P.O., ONT.  
Shipping Station, Toronto. 7-7-0m

## 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.  
12-7-0m **R. S. STEVENSON, Prop.**

## Dominion Prize Ayrshires

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,**  
1-1-7-0 PETITE COTE, MONTREAL, P. Q.

## FOUR AYRSHIRE BULLS FOR SALE.....

Two one year old, and two two years old. Good pedigrees.  
**M. BALLANTYNE, Box 22, St. Mary's P. O.**



## The Improved Robbins Potato Planter

Plants 100% of the seed correctly. Opens a loose furrow, mixes the fertilizer with the soil, drops the seed, and covers with discs. Recommended by leading potato growers and guaranteed to give satisfaction.  
Send for Catalogue describing 30 different Implements.  
**BATEMAN MFG. CO., Box 123, Grenloch, N. J.**

## Ayrshires of Choice Breeding For Sale

4 FINE YOUNG BULLS AT A BARGAIN, ALSO CHOICE HEIFERS.  
FOR PARTICULARS ADDRESS  
**DAVID LEITCH, Grant's Corners.**  
Stations—Cornwall, G.T.R.; Apple Hill, C.P.R.

## 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. 5-1-7-0  
**DAVID BENNING,**  
Glenhurst Farm, WILLIAMSTOWN, ONT.

## 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.  
7-7-0m **WHITESIDE BROS., INVERKIP, ONT.**

## PRIZE-WINNING STOCK FOR SALE

**AYRSHIRE BULLS** fit for service; one out of **Ada No. 832**, 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.  
19-1-7-0m

## AYRSHIRE CATTLE and RED TANWORTH SWINE

A grand lot of each on hand, including a nice lot of in-calf heifers, and **EIGHT BULLS** six to eighteen months old. Write us now for bargains. Prices away down.  
**CALDWELL BROS., Briery Bank Farm, Orchard, Ont.**  
22-1-7-0m

## 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,**  
17-7-0 **Kingston, Ont.**

## KAINS BROS. BYRON, ONTARIO, LONDON STATION.

Breeders of **AYRSHIRE CATTLE.** Several fine young bulls, including the first prize yearling at London, second prize bull calf, and other good ones; also choice heifers of various ages. Prices right. 1-1-7-0

## AYRSHIRE BULL CALVES

for sale cheap, if taken immediately. Three dropped in August, sired by Imp. Glencairn; dams by Silver King.  
**D. DRUMMOND,**  
BURNED FARM, PETITE COTE, MONTREAL

## WM. STEWART & SON, MERNIE, 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. 11-1-7-0

## The Holstein-Friesian Association of America.

The Twelfth Annual Meeting of the Holstein-Friesian Association of America will be held at the Iroquois Hotel, Buffalo, New York, on Wednesday, March 17, 1897, at 10 o'clock a. m., for the election of officers and the transaction of any other business which may legally come before it.

The following propositions will be offered:  
1. To amend Article IV, Section 5, of the By-Laws, so that for one year from this date there shall be no extra charge for the registry of animals on account of age, when offered for registry by either members or non-members.

2. To amend Article IV, Section 10, of the By-Laws, so that for one year from this date there shall be no extra charge for the transfer of animals on account of the date of sale, when offered for transfer by either members or non-members.

3. To amend Article I, Section 1, of the By-Laws, to permit public institutions to become members of the Association for a limited period—25 years—and enjoy the privileges of members so far as they may relate to fees for registry and free herd-books.

4. To amend Article IV, Section 8, of the By-Laws, the words "All animals bred in America shall be registered in the name of the owner," to read "All animals bred in America shall be registered in the name of the owner at birth."

5. To receive the report of the Committee appointed by the Board of Officers upon the advisability of the uniting of other associations with this, and to take such measure as may be necessary to consummate such union.

6. To appropriate money and authorize the Board of Officers to offer to award duplicate premiums, where won by animals recorded in this herd-book, in public competitions for yields of milk or butter or both, and for quality of butter, at such exhibitions as the Board of Officers may select; and to authorize special prizes at fairs where no competitive tests are held, or to establish competitive tests under such conditions as they may deem best.

7. To appropriate money therefor, and to authorize the Board of Officers to continue the system of prizes for officially authenticated butter records substantially as last year.

8. To appropriate money therefor, and to authorize the Board of Officers to appoint a Literary Committee, with authority to carry on such work as it may deem proper for the interests of the breed.  
Brattleboro, Vt. **F. L. HOUGHTON, Sec.**

## Phenomenal Poland-China Sale.

Pure-bred hogs are selling for very high prices. At the Hart-Minis combination sale of hogs held at Edinburg, Ill., Feb. 15, forty-two head brought \$135,131.20, an average price of \$324.60, thus breaking the world's record for hog sales, the previous average price being \$261. **Look Me Over**, a seven-year-old boar, brought \$3,600. This is the highest price ever brought by any hog at public auction. The **Look Me Over** Breeding Association, of Danbury, was the purchaser. **Anderson's Model** sow, was purchased by G. W. Mull, of Carthage, Mo., for \$1,575, which sum is \$35 more than was ever previously paid for a sow.

## GOSSIP.

**John R. Gentry**, 2,004, champion pacing stallion, weighs 935 pounds, and **Robert J.**, 2,014, weighs 850 pounds.

The Shire stud of **Capt. Duncombe**, Marsley, Crumville, Ontario, which has become famous by the success of the animals in the best English show rings. On January 19th, forty-two head of the stud were sold by auction at an average of \$129 1/2 cts. Twelve brood mares averaged \$129 1/2 cts.; three stallions, \$250; six three-year-old fillies, \$35; eight two-year-old fillies, \$77 1/2 cts.; eight yearling fillies, \$104 1/2 cts.; four yearling colts, \$48 1/2 cts.; and one gelding at \$20 1/2 cts. The total amount of the sale was \$2,330 1/2 cts. for the forty-two head, which indicates the estimation in which the Shire breed is held in England at the present day.

The Boston Horse Show Catalogue has been issued. It is to be held in the Mechanics' Building, on April 19th to 24th, inclusive. Entries close March 27th, and must be sent with entrance fees to the Secretary, **Frank Seabury**, 50 State St., Boston, on or before that date. Among the judges we notice the name of **Dr. Andrew Smith**, Toronto, who is to act on Thoroughbreds, also saddle classes. All other judges are Americans. The prices offered amount to \$15,000 in ninety-eight sections, in nearly all of which two prizes are offered, ordinarily \$100 and \$50; \$150 is offered in a number of champion sections, and down to \$75 and \$30 in female sections. In heavy draught horses the only classes made are for mares or geldings three years old and over, single and also double. Prizes of \$50, \$25, \$75, and \$30, respectively, are offered.

**B. Snary & Sons**, Croton, Ont., writing under date of February 11th, says: "Our stock is wintering well. They are in perfect health and nice breeding condition. The demand for real good young stock is good, and prices are somewhat in advance of last year. Our latest sales in Shorthorns are, three cows, with calves at foot, to **C. A. Archibald**, Truro, N. S.; bull calf, to **George L. Michie**, Wallaceburg, Ont.; half calf, to **Gilbert Butler**, Langham, Ont. We have three young bulls left, sired by "Chief Captain." The fourth crop of "Chief Captain" calves are coming on now and we like his stock better than ever. There has been good demand for pigs, our latest sales are, Poland-China, two sows and boar, to **Paul Huff**, Dresden, Ont.; sow, to **S. McVean**, Dresden, Ont.; sow, to **J. C. Wood**, Langbank, Ont.; sow, to **J. W. Snary**, Croton, Ont.; sow, to **George Hooper**, Croton, Ont.; boar and sow, to **T. D. Quigley**, Dawn Mills, Ont.; Chester White boar and sow, to **C. W. Holmes**, Amherst, N.S.; Duroc-Jersey boar, to **J. D. Rubie**, Thorncliffe, Ont. We are breeding fifteen sows for spring litter, and we look for something pretty nice. We have added to our herd a beautiful Duroc-Jersey sow, bred by **Peter Lamarch**, Wheatly, Ont. We have yet on hand one Chester White, two Duroc-Jerseys, and seven Poland-China boars. September farrow, fine growthy fellows with plenty of size and quality. We also have a fine lot of young sows capable of making good breeders.

GOSSIP.

In writing to advertisers, mention the "Farmer's Advocate."

The 15th of April will be a good time to purchase good Shorthorns, as that is the date set for the dispersion sale of Mr. R. R. Sangster's herd at Lancaster, Ont. See advertisement.

Mr. R. B. McMullin, Blytheswood, Ont. (formerly Goldsmith, Ont.), writes under date of Feb. 24: "Sales have been good, thanks to the ADVOCATE, but I still have a choice lot of July hatched Poland Chinas for sale yet at low prices."

R. Gaunt & Sons, St. Helen's, Ont., writes under date of Feb. 23: "Please omit in my advertisement for next issue, reference to Mammoth Bronze turkeys, of which we are sold out, except a few toms. The birds we offer are developing wonderfully well, and are bound to do their purchasers lots of good."

At a recent New York high-class carriage horse sale, twenty-five high stepping geldings were sold at an average per head of \$353. The highest price for a team was \$1,150, and for single horse \$300. These were chestnuts, five and six years old. Five horses were seven years old, ten six, and ten five years old. They were mostly from trotting-bred sires.

Mr. J. C. Snell, Snelgrove, Ont., writes: "The improved price of pork is already making itself felt in the increasing demand for breeding stock. We have a number of orders for Berkshires lately, and have shipped to several points in Ontario and Quebec, also to Manitoba and the U. S. We have had many enquiries for sheep from the States, and have prospect of making some important sales within the next few weeks. Our Cotswolds are coming through the winter in good condition, and lambs are coming strong."

The very much improved demand and prices for good draft horses within the last year is leading to make the breeding of such, one of the most profitable lines of stock breeding. To get the top prices, good size is essential, and to get this no breed surpasses the Shire. The well and favorably known firm of Messrs. Morris, Stone & Wellington, of Welland, Ont. make some desirable offerings in this issue of the very sorts that will make money for those who are fortunate enough to secure them. See their advertisement in this issue.

Tape Bros. write: "Our Duroc-Jersey swine are now in the most excellent and healthy condition. We have never had a lot of such superior quality; our young sows are excellent. Our boars fit for present service are all sold out; have a grand lot coming on for spring use. Our fall pigs (either sex) are No. 1. The demand is steadily increasing as the people are becoming acquainted with them. There is a grand future before them, as they combine all the qualities required to make a profitable farmer's hog. Our sales during the winter have been very satisfactory, having shipped as far west as British Columbia and east to Nova Scotia, with many sales throughout Ontario and Quebec. We hear nothing but praises for them wherever placed. Our spring litters are sired by three first-class imported boars, and we expect an extraordinary crop."

Arthur Johnston, of Greenwood, writes this office as follows: "We have still on hand, and for sale at very moderate prices, a grand growthy lot of young Shorthorn bulls fit for immediate service. They are big, sappy fellows of the best breeding and the first quality. Our whole herd can now be said to be in the very finest breeding form none fat and none poor; but all healthy and thriving. Our yearling heifers are going on to please. They will be heard from in some breeder's hands. We are fixing up a few two-year-olds also. Stock markets are rapidly improving, though prices remain low. Enquiries are numerous and a better feeling prevails all round. We have already 19 beautiful young calves, dropped since last September, with many more to come. There is a better feeling abroad in the Shorthorn world."

Mr. Archibald MacNellage, Secretary of the Clydesdale Horse Society of Great Britain and Ireland, has sent us the Twentieth Annual Report issued by the Council. When this society was instituted there was a foreign trade of some importance with Australia and New Zealand; shortly after that time an enhanced enquiry arose in the United States and Canada, and in some years during the period from 1880-92 as many as 1,000 pedigreed horses and mares were exported. The bulk of this foreign trade reached its height in 1889-90, and the twelfth volume, published early in the latter year, is the largest of the series. Since that date the Society has been passing through a period of depression; but no fear is felt for its future since the Clydesdale is appreciated at home as he has never been in the past, which is indicated by the extent to which Clydesdale sires are being used to get work horses. The nineteenth volume of the Stud Book is being issued. The membership roll of the Society contains the names of 112 life governors, 384 life members, and 262 annual members. The capital stood, in December, 1896, at £1,251, or available capital invested to the amount of £1,100.

A GREAT HACKNEY SALE.

Mr. W. D. Grand, formerly of Toronto, now of New York, sold at the new American Horse Exchange, on February 3rd, ninety-three head of Hackneys and Vermont-bred carriage horses from Dr. Seward Webb's famous Shelburne farms and in Vermont. The champion Hackney stallion Matchless of London was the first number sold. He was purchased by Mr. W. L. Clark, proprietor of the Glendower Stock Farm, Staten Island, for \$12,000. Other bidders for the Stallion were Dr. Ryder, representing the Duke of Marlborough, and Geo. B. Hulme, acting on behalf of Sir Walter Gilby, the most famous breeder of Hackneys in England. The next highest price paid was \$1,050 for Lady Life, a seven-year-old chestnut mare by Danegeld; \$825 was paid for Gay Lady, seven-year-old by North Star. The total price for the ninety-three head was \$31,140, an average of \$334.51 per head. Seventy-five head of Hackneys averaged \$338.94, and eighteen head of carriage horses averaged \$291.41.

ADVERTISE IN THE ADVOCATE

BUY "GIANT" MACHINES IF YOU WANT THE BEST.

"GIANT" SECTIONAL SEEDER. WITHOUT EXCEPTION, THE BEST CULTIVATOR AND SEEDER IN THE MARKET.

GIANT STEEL DISC HARROW. STEEL BEAM, ALL BALL BEARINGS, CHILLED BOXES, LIGHT DRAFT, NO MORTISE IN POLE, BEST TEMPERED ROLLED EDGE DISCS.

ALL SOLID STEEL DIAMOND HARROW.

WORLD FAMOUS "GIANT" SECTIONAL STEEL CULTIVATOR. CHOICE OF TERTH WITH SOLID POINTS OR REVERSIBLE POINTS. THE "GIANT" HAS STRONGEST FRAME, LEAST NUMBER OF PARTS. BEST TOOTH HELPER. BEST PRESSURE. STRONGEST WHEELS. LIGHTEST DRAFT. LARGEST SALE.

ALL MACHINES WARRANTED.

WRITE FOR ILLUSTRATED CATALOGUE.

EXAMINE OUR LINE OF MACHINES BEFORE PURCHASING. WE GIVE BEST VALUE IN SEEDING AND CULTIVATING MACHINERY.

F. C. BOWLEY, LOCAL AGENT FOR LONDON DISTRICT, 101 King Street, LONDON, ONT.

HUGH MCINTOSH, GENERAL AGENT FOR WESTERN ONT., 90 BRUCE STREET, LONDON.

THE MANN MFG. CO., LTD., BROCKVILLE, ONT.

Choice Ayrshires of deepest milking strains. Largest and oldest herd in Ontario. We have choice young stock of both sexes sired by Leonard Meadowsdale, sweet-stakes bull at Ottawa. Also choice Shropshires, and a fine lot of Berkshire pigs for sale. Visitors met at Queen's Hotel. Give us a call.

J. YUILL & SONS, CARLETON PLACE, ONT.

WM. WYLIE, 228 Beary St. MONTREAL, or Howick, P.Q.

Breeder of high-class AYRSHIRES. Young stock 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-o

First Prize Ayrshire Herd at Toronto, 1896, headed by the imported bull Beauty's Style of Auchinbrain (2783) - 112 - sire of 1st and 2nd prize 2-year-old heifer (the first of his get), and a number of other winners. Having recently imported a bull, we now offer quiet, sure, and all right in every respect; also 9 bulls from 2 to 17 months, 6 of them out of imported cows.

THOS. BALLANTYNE & SON, Neidpath Stock Farm, Main Line G. T. R. 2 miles. Stratford, Ont. 1-1-y-o

To Farmers, Stock Dealers and Wool Growers: FOR SHEEP, CATTLE AND HORSES.

Leicestershire Tick and worm destroyer. It effectually destroys Ticks, Lice, Worms or Grub, to which sheep, horses and cattle are subject, and enables the animal to thrive. It will be found far superior to other preparations used for the similar purpose. The proprietors will guarantee perfect success when used according to directions, as will be found on each box. It prevents scurf and scab, and renders the wool bright and clear. It is put up in tin boxes, price 30 cents each. One box is sufficient for twenty ordinary sized sheep. It only requires to be tried to prove itself all that is claimed for it. Sold by druggists and grocers. Manufactured by G. C. BRIGGS & SONS, 31 King St. West, Hamilton, Ont. oe

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-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 Scurf, 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, 1890.

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 stables 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, Stockmen 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-o

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 LEVY-RRING, Sec., Lafayette, Indiana. 3-1-y-o

OXFORD DOWN SHEEP. A FINE LOT OF YOUNG STOCK FOR SALE. A FEW NICE YEARLING RAMS AND EWES. PRICES REASONABLE. INSPECTION INVITED. 62-y-o

HERBERT WRIGHT, Box 47, Guelph, Ontario. 7-y-o

HOBBS' SHEEP DIP

Agents wanted in every county. Good commission to live men. Samples free.

- For Sheep and Lamb Dip, use 1 pint to 12 gallons of water, and use in the ordinary way. It destroys ticks and lice, promotes the growth and improves the quality of the wool. For Scab, use 2 pints fluid to 12 gallons of water, or a stronger mixture may be used when the disease is very obstinate. Break the scab and pour the mixture on the raw surface.
- For Washing Dogs, Fowls, Horses, and other Animals, use 8 tablespoonfuls to half a gallon of water. All animals may be washed with this mixture and freed from fleas, etc., by its occasional use.
- For Cleansing Stables, Kennels, Piggeries, etc., use quarter pint fluid to every 5 gallons of water, two or three times a week.
- For Destroying Insects on Plants, Rose Trees, etc., use 1 pint fluid to 12 gallons of water, and apply with a syringe or watering pot at evening or morning.

Sold in Tins, medium size, . . . pints, 40c. Sold in Tins, large size, . . . quarts, 75c.

HOBBS MANUFACTURING CO., London, Ont.

G. & E. WOOD, BREEDERS OF HIGH-CLASS Leicesters. Choice ewes and ewe lambs for sale at very low prices, considering quality. Write for prices and particulars. 18-y-o

Hill Home Shropshires. 200 to select from. Foundation stock personally selected from the leading flocks of England. Flock especially noted for combined quality and size, and extra covering on face and legs. Now is the time to invest, as the prospects for sheep in the near future are encouraging. We now have for sale over one hundred choice breeding ewes from one year up, also ram and ewe lambs, at very moderate prices. Address-D. G. HANMER & SONS, 14-L-o Mt. Vernon, Ont.

"FARNHAM FARM" OXFORD DOWNS. I HAVE a few choice young ewes in lamb to imported ram, also some ewe lambs, for sale. Fitting show sheep a specialty. 7-y-o

HENRY ARKELL, Arkell, Ont.