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MANITOBA AND WESTERN EDITION

THE FARMER'S ADVOCATE

AND HOME MAGAZINE



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

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VOL. IV. LONDON, ONT., AND WINNIPEG, MAN., DECEMBER 20, 1893. No. 60.



CANADA VICTORIOUS.
World's Columbian Exposition, Chicago, 1893.

To Our Subscribers.

This issue closes the twenty-eighth volume of the FARMER'S ADVOCATE. The year now closing is notable as one of the most disastrous, financially, experienced by the present generation. Our neighbors, particularly those to the South and West of us, have suffered severely. The failure and closing of many banking institutions depressed trade in every line. Canada has suffered, but not so severely as some of the neighboring States. The price of farm produce is very low; no immediate improvement in this line is anticipated. The remedy is only to be found in improved methods of production. We must reduce the cost of production in every possible way. The Experimental Farms, the Institutes, the Live Stock Associations, and the Agricultural Press are destined to fill a larger place than ever before. We, as farmers, must study our business closely and benefit by the experience of others. In a recent report, the judges of prize farms in Ontario in dealing with this subject wrote:—

"As we went from place to place, we observed that the men who read and think much are the most progressive and prosperous. We met many farmers who work early and late, but were not successful, because their efforts were not well directed; they were behind the times in every department. Yet these very men told us that they had no time to read or go to the Institute meetings; or they affirmed that they knew more than the agricultural writers or speakers did, and consequently were not going to fool their time or money away on any such nonsense. Poor fellows, they were neglecting opportunities and slaving to little purpose."

What would we think of a doctor or lawyer who neglected to take his medical or law journal, as the case might be? Would not we think twice before entrusting an invalid or an important legal action to such hands? Science is moving with such mighty strides that new methods are introduced every day. What the world was ready to accept as facts a few years ago is now questioned or perhaps set aside altogether. To keep ourselves abreast of the times we must read live papers and associate with live men.

During the past year the ADVOCATE has been very successful. Our circulation has steadily increased. We are now mailing over 45,000 copies per month. Our circulation in Manitoba and the N. W. Territories has largely increased. In Manitoba we have the largest circulation of any paper, political or otherwise. In Ontario and the Maritime Provinces our circulation is three times greater than that of any other agricultural paper. Our subscribers in the United States are constantly increasing. We send papers to no less than thirty-seven American States.

We thank our old subscribers for past favors, and crave a continuation of their support. Our staff, our experience and usefulness are constantly increasing. We hope to issue a better paper in 1894 than ever before. We are anxious to double our subscription list. Lend us a hand in the good work; renew at once, and send us the name of a neighbor as a new subscriber. The larger our circulation the better paper we can give our readers.

We wish all our friends a merry Christmas and a prosperous New Year.

Our Clubbing Rates for 1894.

We offer our subscribers papers at the following rates:—

THE FARMER'S ADVOCATE AND HOME MAGAZINE	
—AND—	
Winnipeg Weekly Tribune.....	\$1 75
Toronto Weekly Mail.....	1 75
Daily.....	6 00
Weekly Globe.....	1 75
Daily.....	6 00
Weekly Empire.....	1 75
Daily.....	6 00
London Weekly Free Press.....	1 75
Daily.....	4 25
Weekly Advertiser.....	1 75
Montreal Weekly Witness.....	1 60
Family Herald and Weekly Star.....	1 75
Weekly Gazette.....	1 50
Cosmopolitan Magazine (Monthly).....	2 25
Remit by Post Office order or registered letter, Post Office order is cheapest and best.	

The reports regarding tuberculosis at the Guelph Experimental Station are so conflicting that we have determined to learn the facts before communicating with our readers. It is quite evident the party papers on both sides are endeavoring to make capital out of this question.

CANADA VICTORIOUS.

Summary of Awards for Live Stock and Poultry.

Class	Breed	COMPETITION.		NO. OF AWARDS.		AMOUNTS.		MEDALS.		Remarks.	
		Can.	U. S.	Can.	U. S.	Can.	U. S.	Canada.	United States.		
1	Shorthorns.....	47	151	18	32	\$3370	\$5221	3 Medals	2 Medals	1st, 3rd, 4th and 5th prized aged bulls won by U. S., but bred in Canada. Nearly all 1st prized animals won with imported stock.	
2	Herefords.....	19	70	3	36	135	5080		2 Medals		
3	Aberdeen-Angus.....	11	40	2	46	95	3030		2 Medals		
4	Galloways.....	13	32	11	36	820	3250	1 Medal	1 Medal		
5	Devons.....	12	38	18	26	455	1580	1 Medal	1 Medal		
6	Jerseys.....	1	35	1	54	...	2035		2 Medals		
7	Holsteins.....	8	20	6	24	180	1250		2 Medals		
8	Ayrshires.....	67	40	48	5	1885	150	2 Medals		Prizes not duplicated by American Association. A few special prizes. Canada not allowed to compete.	
9	Gurnseys.....	2	46	1	48	20	2015		2 Medals		
148	Fat Cattle—Shorthorns.....	4	12	3	10	140	670			Judging most partial.	
HORSES.											
23	French Coach.....	6	57	3	30	125	3730	2 Diplomas	3 Medals		
22	Thoroughbred.....	13	...	13	...	2250	...	2 Medals			
21	Standard Trotting.....	2	71	1	35	125	3750		2 Diplomas		
25	Cleveland Bay.....	3	43	1	36	50	2925		3 Medals		
26	Percheron.....	9	118	1	53	25	4275		2 Diplomas		
27	Clydesdales.....	43	99	6	51	615	8250		2 Diplomas		
31	Suffolk Punch.....	1	24	1	23	35	2790		2 Diplomas		
32	Hackneys.....	9	21	13	19	720	1360	2 Medals			
35	American Arabs.....	5	8	5	2 Gold Medals	5 Medals		
SHEEP.											
40	Cotswolds.....	38	45	19	28	475	695			These prizes were not duplicated.	
41	Leicesters.....	42	5	35	2	940	35	1 Silver Cup		" " " " " "	
42	Lincolns.....	53	5	42	2	1085	45	1 Silver Cup		" " " " " "	
43	Southdowns.....	57	37	31	14	1605	550	1 Silver Cup		" " " " " "	
44	Shropshire-Downs.....	39	37	15	34	1115	2195	1 Silver Cup		" " " " " "	
45	Oxford-Downs.....	40	65	11	33	480	1790			These include the duplicated prizes.	
46	Hampshire-Downs.....	5	63	4	40	180	1405				
50	Dorset-Horn.....	39	38	38	18	945	750	1 Silver Cup			
171	Fat Sheep.....	42	35	53	21	716	276	9 Diplomas	4 Diplomas	Value \$100, by the Cooper Sheep Dip Co., England. One judge (an American), and most unsatisfactory.	
SWINE.											
60	Essex.....	18	60	11	40	480	2400				
	Improved Yorkshire.....	42	11	45	1	743	11				
	Tamworth.....	7	12	7	10	66	134				
	Suffolk.....	1	13	1	11	12	147				
POULTRY AND PET STOCK.....		1147	2453	501	671	2633	3286				

Timely Notes for December.

RURAL ENTERTAINMENTS.

In some districts, "socials," concerts, tea fights, "open meetings" of temperance lodges, etc., etc., are so numerous that they pall and fail to draw, while in others they draw immensely on account of their rarity. Farm life is dull enough in our long-winters, but very often, through lack of stabling, however poor, at our rural schools, many a friendly "social" comes to naught, as fathers naturally refuse to allow their horses to stand outside for four or five hours on the open at "30" below. Many a boy misses going to school the greater part of the winter because there is no stable to put his horse in at the school, and he is yet too young to struggle two or three miles through the deep snow. Would it not be well for the school authorities to insist on a plain shed being erected adjacent to each country school—it would benefit not only the youngsters, but those "children of a larger growth," who would then turn out to more winter gatherings—the cost to come out of the general school fund? Let us have a little harmless amusement this winter, and forget the tariff, etc., for an evening now and then.

CARE AND USE OF MANURE.

Dare we say that perhaps the failure, partial in many places, almost complete in some sections, was due as much to impoverished soil as to the season? All the land, even in Manitoba, is not inexhaustible—even the Red River Valley is "playing out." Friends, the "skin" game is about run out in Manitoba, and the sooner we go in for systematic manuring, rotation of crops and mixed farming generally, the better it will be for us and our country. I know of no better way at present than to use plenty of absorbents, such as wheat straw and earth, and haul the manure on to the land direct from the stable. The next best method is to make a good manure heap, and plow the manure in on the summer-fallow. As very few of us can afford manure sheds at the present price of lumber, it would be well to round off the manure pile, and be careful not to place it where the water could run off buildings into it. I believe in spreading manure as hauled, if possible. Sometimes it is too cold to do so.

EXTORTION OR INTEREST.

In several letters recently to the Provincial Press various correspondents have stated that farmers' homes have been sold up, etc. I have only known of a few, a very few, cases in which the extreme limit of the law has been taken, and in those the farmers were to blame for dishonest actions, and richly deserved their fate. When a man once gives any particular creditor a chattel mortgage or other preferential claim on his crop or stock, he has only himself to blame if he disposes of that stock and applies the money in some other way than in paying off that preferential claim. But, again, on the other hand, I do not consider that a creditor, whether he be machine dealer or grocer, has any right to extort twelve per cent. on over-due paper, or a fine or bonus for renewing a debt which is not paid at maturity.

There is generally quite enough extorted at time of sale to make up all losses on over-due paper. I am very doubtful if such extra rate of interest could be enforced, if the creditor chose to fight it in the courts. A suggestion from a correspondent in a recent issue of the Tribune that judges in flagrant cases should give judgment for twenty-five cents a month or year would choke off a great deal of this work, and would undeniably be a benefit to the greater part of the farming community. It was said at one of Mr. Foster's meetings in the west that a certain implement firm would soon own the country if some reduction were not made in duties on implements. Now, though the said company are neither better nor worse than other operators—in fact, they are rather better than worse than some—still I have found that they will give every man all the time possible, so long as they think he will eventually pay. They are not so foolish as to kill the goose that lays the golden egg if they can help it.

We have heard a great deal, and a great deal of useless legislation has been enacted on the rights and claims of laborers, but does not the farmer want some protection, too, from these same over-protected laborers and money-lending and credit-giving dealers? Is not it rather a farce to send immigration pamphlets broadcast over the world, inviting people to come here and settle, when those that are here can hardly make a living?

A SILVER LINING.

The return of Mr. J. Martin as member for Winnipeg by such a sweeping majority has shown that in spite of dead voters and manufacturers' money, the Manitoba people can no longer be "spoon-fed" from Ottawa on N. P. soup, flavored with the red pepper of high freight rates, and the sauce of a ruinous customs tariff. Let us hope the other constituencies will be heard from to the same tune. It would have more effect in bringing in immigrants than a whole shipload of special agents and flattering pamphlets.

VARIOUS.

A merry Xmas to you all, friends, your wives and your mothers-in-law, not to mention the sisters, cousins and aunts. A frolic will do none of us any harm, for as the rhyme has it:

'A Christmas oft could cheer
The poor man's heart thro' half the year.'

"INVICTA."

Co-operative dairying is increasing largely in New Zealand. New creameries and factories are reported at frequent intervals in various parts of the islands.

An Australian farmer has adopted a very peculiar method of making silage. Having eight acres of corn, which yielded a heavy crop, he laid the entire stalks, uncut, in three stacks, taking care to lay them all one way, without crossing. Then he weighed the stacks down with logs and stones. When it had settled he covered the whole with earth two feet deep, raised to a crown on top, which he thatched with cornstalks. The silage came out in good condition, and was greedily eaten by the cattle.

THE FARMER'S ADVOCATE & HOME MAGAZINE

THE LEADING AGRICULTURAL JOURNAL IN THE DOMINION.

PUBLISHED BY
THE WILLIAM WELD COMPANY (LIMITED).
LONDON, ONT., and WINNIPEG, MAN.

1. The Farmer's Advocate is published on the fifth and twentieth of each month.

It is impartial and independent of all cliques 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.

2. Terms of Subscription—\$1.00 per year in advance; \$1.25 if in arrears; sample copy free. European subscription, 6s. or \$1.50. New subscriptions can commence with any month.

3. Advertising Rates—Single insertion, 15 cents per line. Contract rates furnished on application.

4. Discontinuances—Remember that the publisher must be notified by letter or post card when a subscriber wishes his paper stopped. All arrears must be paid. Returning your paper will not enable us to discontinue it, as we cannot find your name on our books unless your Post Office address is given.

5. The Advocate is sent to subscribers until an explicit order is received for its discontinuance. All payments of arrears must be made as required by law.

6. The Law is, that all subscribers to newspapers are held responsible until all arrears are paid, and their paper ordered to be discontinued.

7. Remittances should be made direct to this office, either by Registered Letter or Money Order, which will be at our risk. When made otherwise we cannot be responsible.

8. Always give the Name of the Post Office to which your paper is sent. Your name cannot be found on our books unless this is done.

9. The Date on your Label shows to what time your subscription is paid.

10. Subscribers failing to receive their paper promptly and regularly will confer a favor by reporting the fact at once.

11. We invite Farmers to write us on any agricultural topic. We are always pleased to receive practical articles. For such as we consider valuable we will pay ten cents per inch printed matter. Criticisms of Articles, Suggestions How to Improve the ADVOCATE, Descriptions of New Grains, Roots or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.

12. Replies to circulars and letters of enquiry sent from this office will not be paid for as provided above.

13. No anonymous communications or enquiries will receive attention.

14. Letters intended for publication should be written on one side of the paper only.

15. All communications in reference to any matter connected with this paper should be addressed as below, and not to any individual connected with the paper.

Address—
THE FARMER'S ADVOCATE, or
THE WILLIAM WELD CO.,
WINNIPEG, MAN.

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Our Subscription Prizes.

In our advertising department, page 491, will be found a description of a number of subscription prizes. All goods offered by us are warranted as represented, first-class in every particular. The rings are solid gold and the stones of good quality and well-set. The watch is a curiously cheap device, but a substantial time-keeper, and we believe will give good satisfaction. The live stock offered will be selected from the herds and flocks of the most reliable and capable breeders. The other premiums are meritorious. Our subscription pictures, "Canada's Columbian Victories" and "Canada's Pride," are fine works of art, not cheap prints or chromos. We ask every old subscriber to send us at least one new name.

The Russian government has issued new regulations concerning the manufacture and sale of margarine and all artificial substitutes for butter. Special inspectors, who have received technical and medical education, will visit these establishments and analyze the products, with authority to impose fines or close the works, for infringement of the regulations.

Brandon Experimental Farm.

It affords us much satisfaction to devote a few columns of our space to record the successful experiments carried on at the above farm during the past summer. The season, on the whole, was good, though somewhat too dry, and the hot winds and weather of August, when the harvest was nearly ready, caused considerable damage by unduly hastening the ripening and shelling out the more matured grains. Comparing the results, however, with that of the average farms of the district, the inevitable conclusion must be that thorough cultivation and improved methods will do much—very much—to better the returns on our farms, and more especially in such a season as the past has been. When we see a yield of thirty-six bushels of wheat per acre, ninety-one of oats and fifty-seven of barley, it should serve as a stimulus to our efforts—a high ideal for us to strive after. But all acquainted with the model superintendent of this farm would expect nothing but success from so conscientious, painstaking and enthusiastic an official.

The benefits derived from the farm are not confined to the farmers resident in the province, but many visitors from all parts of the continent—in fact, of the world—annually visit this institution, and cannot fail to be impressed with the vast resources of our fertile prairies, and the good impressions thus created will yield fruit in due time.

As an evidence of the ever-growing popularity of the farm, there has been an increase of upwards of 6000 visitors over last year, making a grand total for the year just closing of 11,000, of whom the great majority were farmers or persons more or less directly interested in agricultural pursuits.

The correspondence has also largely increased, showing that a wider interest is being taken in advanced agriculture—in fact, the people are *thinking*.

Last winter, in the February 20th issue of the ADVOCATE, were published very full reports and tables of the various experiments in grains for the year 1892, and we herewith present a review of the experiments carried on in the season just past, adding several very interesting tables on averages covering results for a number of years. And we herewith publicly desire to express our gratitude to Mr. Bedford for his assistance in preparing the matter. On our recent visit everything was found in ship-shape order. Cattle and horses all in fine, thrifty condition, contentedly chewing away at their rations of *straw*; hay is a luxury they see little of. Sheep or pigs there are none—more's the pity, as feeding experiments with these "mortgage lifters" would be particularly interesting just now. The poultry house and runs are just completed and are models in their way, and we hope next year to have some practical experience from the business hen.

The windmill erected on the big barn has given great satisfaction, and has not cost a dollar yet for repairs; it is a twelve-foot steel wheel, and will, with a moderate wind, pump eleven barrels of water per hour, with a stiff breeze will grind sixteen bushels of oats or eight bushels of barley per hour, or will cut a ton of fodder corn in nine minutes.

If every farmer had a big barn rigged with a windmill, pump, crusher, etc., how comfortably the winters would pass.

Much has been done during the past season in setting out trees, shrubs, etc.; some work also has been put on the drives and roads to good purpose. One of the first things to be noticed by a visitor is the beautiful, even and rapid growth made by the maple and spruce trees along the main drive and boundaries. What has, perhaps, more than any other thing conserved to this end is the thorough system of cultivation around these trees, a weed never being allowed to go to seed in these borders, and the surface being kept absolutely clean. But we will give fuller particulars of the trees and shrubs later on. A large implement and grain storage barn has been erected this fall, which will prove of great assistance in selecting, sorting and storing the sample grains. Another important work begun and almost completed this fall is an under drain to take the water out of several hollows, so as to give uniformity to the plots. About 4,000 feet of tile drain has been laid as main drain—it is not intended to lay any system of branch drains. Coming to the experiments proper: In fruit trees some progress has been made. The apple trees down on the flats are all alive, being so situated as to be well covered with snow every winter. A few specimens of the "anis" give some promise of bearing in the future. In crabs the "Transcendant" still holds supremacy. In plums and cherries everything has been a failure except the native plum, which, however, promises to be

very useful. Small fruit, currants, gooseberries, have done well; of the former there is now a nice collection of some twenty-five varieties.

A daily record of rainfall, sunshine temperature, winds, etc., etc., is kept. From April to September, inclusive, only 6.9 inches of rain fell, so that it is needless for us to remark that it was a dry season in that portion of the Province. The sun shone out in all his splendor over the western prairies for 1507 hours during the period from March to September, both included.

TESTING SEED BEFORE SOWING.

Very serious losses have occurred every year from sowing seed that has been damp and heated. One man we heard of who lost his entire crop of 640 acres from this cause. The remedy is at hand, and if any shadow of doubt exists as to the fertility of seed, send a small sample to Ottawa and have it tested; it will not cost you anything, and may save a crop.

In order to ascertain the average fertility of good, sound grain, Mr. Bedford had tested 49 samples of wheat of 1892 growth, .91 per cent of which grew; 41 samples of oats, .97 per cent grew; and 34 samples of barley, .90 per cent of which grew—so that any grain .90 per cent of which does not germinate should not be considered safe.

SUMMERFALLOW AND COUCH GRASS.

Further experiments have been conducted in summerfallowing. The Superintendent considers a stiff-legged cultivator, made with teeth wide enough to overlap an inch, as being by all odds the best implement for use on heavy soils, after testing many others for the past few years. Special attention was this season paid to summerfallowing couch grass, which is becoming such a frightful pest in many parts of the Province, especially on the lighter soils. Two varieties of grass are the chief sinners. The true couch grass (*agropyrum glaucum*), or "Colorado Blue Stem," is of a bluish-green shade; flowering period is the first half of July. The grass that is perhaps causing most trouble is not couch grass proper, but the "sweet grass," or "holy grass" (*hierochloa borealis*), with a light green blade; flowering early in May and easily known by its sweet scent.

To rid land of the latter, one plowing only seems to cultivate it, but two plowings, one early in May (the usual June plowing for summerfallow allows this grass to mature its seed), and another a little later on, with thorough cultivation with harrow and cultivator, have almost entirely conquered it.

CULTIVATION OF FALL PLOWED LAND.

Sown with Press Drill on May 2nd, 1 1/2 bushels per acre, soil black loam, summerfallow—bluestoned, no smut or rust. It has generally been considered necessary to have land fall plowed for wheat, and it has been advocated that the more work put on the land in the fall in the way of harrowing, rolling, etc., the more moisture would be retained in the soil, and consequently the better crop. The tests along this line, however, show that the more cultivation the worse the results and the more weeds (of course, the harrows would not tear out as many weeds from smooth, finely worked land as they would from land left rough). It will also be noticed by the appended table that the summerfallow comes out ahead in yield, but is a few days later in maturing:—

Variety.	How treated.	Weeds.	Length of straw.	No. of days maturing.	Ripe.	Yield per acre.	Weight per bu.
Red Fife.	Summerfallow.	None	43 in.	108	Aug. 19	26.30	59
" "	Fall plowed only.	"	37 "	104	" 14	23.30	59
" "	Fall plowed and harrowed twice.	Few	35 "	104	" 14	22.40	60
" "	Fall plowed and harrowed and rolled.	Weedy.	38 "	103	" 13	21.30	58
" "	Fall plowed twice harrowed and rolled.	Very weedy.	32 "	103	" 13	19.10	60

EARLY MEDIUM AND LATE SOWN WHEAT.

This test shows some variation from that of the past years, owing, no doubt, to the difference in the seasons, still, the earliest sown ripened first, although this year the second earliest sown gave the largest return.

Red Fife again proves the heaviest yielder, and ripened this year as early as Campbell's White Chaff.

When sown.	Variety.	Length of straw.	Length of head.	Rust.	No. of days maturing.	Ripe.	Yield per acre.	Lbs. per bushel.
May 2nd.	Red Fife.	43 inches.	4 inches.	None.	108	August 18th.	bush. lbs.	59
" 9th.	" "	43 "	3 "	"	104	" 21st.	28 10	60
" 16th.	" "	43 "	3 "	"	100	" 24th.	28 50	60
" 23rd.	" "	43 "	3 "	Little.	96	Sept. 1st.	25 40	56
" 30th.	" "	35 "	3 "	"	98	" 3rd.	22 10	61
June 6th.	Campbell's White Chaff.	42 "	3 "	"	108	August 18th.	23 30	60
May 2nd.	" "	46 "	3 "	"	104	" 21st.	23	57 1/2
" 9th.	" "	46 "	3 "	"	104	" 28th.	17	57
" 16th.	" "	36 "	3 "	"	101	September 1st.	15	57
" 23rd.	" "	30 "	3 "	Badly.	96	" 3rd.	15	57
" 30th.	" "	34 "	2 1/2 "	Very bad.	95	" 9th.	12 30	59

DRILL TESTS.

To make these tests more comprehensive, Mr. Bedford this year furnishes us with the following table, showing four years' averages of drill tests; it shows in wheat a difference of five bushels per acre in favor of the drills as against broadcast sowing, and no less than eleven bushels in the case of barley. This should convince the most skeptical:

Table with columns: Wheat, Years Included, Average Yield per Acre, Average Days Maturing. Rows include Common Drill, Press Drill, Broadcast for both Wheat and Barley.

BLUESTONE AS A PREVENTIVE OF SMUT.

These tests were continued as in previous years with like results. To the almost universal use of Bluestone is due, to a very large extent, the absence of smut in this year's crop. Where only a few pounds could be disposed of a few years ago tons are now sold.

Table with columns: Variety, How Treated, Yield per acre, Weight per bushel, Smutty heads, Heads with no smut. Rows show Very smutty Red Fife and White Connell under different treatments.

THE CUTTING OF WHEAT AT DIFFERENT STAGES OF RIPENESS.

For this test plots one-tenth of acre were used, soil being black loam, summer-fallowed the previous year; sown 1 1/2 bushels per acre, with common drill, on May 5th.

During the past few years tests have been carried on to determine the proper stage to cut wheat. In 1892 it appeared to make little or no difference what stage the wheat was in, but this year there being no frosts, which had interfered in previous years, the test shows a very considerable loss, both in quantity and weight, if cut previous to the "dough" stage.

Both Red Fife and White Connell were tried, with much the same results.

Table with columns: Variety, Stage when cut, No. days from sowing, Date of cutting, Yield per acre, Weight per bushel. Rows include Red Fife and White Connell at various stages.

TESTS OF EIGHTEEN VARIETIES OF BARLEY.

The first three on the list are good, stiff-strawed varieties:—

Table with columns: Variety, Length of straw, Kinds of head, Length of head, No. days maturing, Ripe, Yield per acre, Weight per bushel. Lists 18 varieties of barley.

TEST OF TWELVE VARIETIES OF PEAS.

Soil clay loam, one-tenth acre plots, sown with common drill, on summer-fallow, on May 5th.

Table with columns: Variety, Amt. sown per acre, Apparent thickness, Length of straw, Length of pods, No. days maturing, Ripe, Yield per acre, Weight per bushel. Lists 12 varieties of peas.

TEST OF THIRTY-NINE VARIETIES OF WHEAT.

It will be noticed that Goose wheat takes the lead, but this variety is only fit for feed. This year the White Connell yields less than the Red and White Fife. Harrison's Bearded is one of the varieties that has done well at the Guelph Experimental Farm. The early maturing Hybrid varieties, Stanley, Stonewall, Preston, Albert and Trial, ripened just in time to suffer from the hot weather of July and August, and were also badly threshed out by the fierce wind of August, which has greatly reduced the yield. Sown in the valley 3rd May; soil, black loam; summer-fallow; sown with common drill; 1 1/2 bushels per acre; bluestone; no smut.

Large table with columns: Variety, Length of straw, Kind of head, Length of head, No. days maturing, Ripe, Yield per acre, Weight per bushel. Lists 39 varieties of wheat.

MANURED PLOTS.

To find the lasting power of manure; plots that were manured and cropped in 1892 were again cropped (without manure) in 1893, and yielded two bushels more per acre than plots not so treated. In every case the application of manure, whether fresh or rotted, appeared to produce more weeds.

TEST OF FORTY-FIVE VARIETIES OF OATS.

The Banner oat again heads the list, and Mr. Bedford considers this the best all-round oat for this Province. The new varieties tested this year are: Wide-Awake, Cave, Golden Beauty, Imported Irish, White Wonder, Scottish Chief, Oderbruch, Canadian Beauty and Columbus, all of which are white.

These test plots were situated in the valley, sown on clay loam, summer-fallowed, sown with common drill, nine pecks per acre, on 6th of May. Size of plots, one-tenth of an acre.

Table with columns: Variety, Length of straw, Kind of head, Length of head, No. days maturing, Ripe, Yield per acre, Weight per bushel. Lists 45 varieties of oats.

MIXED CROPS GROWN FOR GRAIN.

This has been a favorable year for this crop, and the result has been a good yield of heavy peas. The pea crop is usually a good one on the Experimental, the great objection being the harvesting and threshing, and in order to overcome this difficulty a trial was made with mixing peas with other grains, cutting with a binder and threshing with an ordinary separator, but as shown by the accompanying table the yield of peas has not been very satisfactory.

Table with columns: Variety, Pks per acre, Date of sowing, How sown, Yield of mixture per acre, Proportion of peas per bushel. Lists mixed crop varieties.

AVERAGES OF WHEAT YIELDS FOR FOUR YEARS.

The following very useful tables, showing the average yields of wheat, oats and barley for the last four years, cannot fail to be of interest to all.

Table with columns: Variety, Years included, Average yield per acre, Average days maturing, Average weight per bushel. Lists various wheat varieties.

AVERAGES OF OAT YIELDS FOR FOUR YEARS.

Table with columns: Variety, Years included, Average yield per acre, Average days maturing, Average weight per bushel. Lists various oat varieties.

AVERAGES OF BARLEY YIELDS FOR FOUR YEARS.

Table with columns: Variety, Years included, Average yield per acre, Average days maturing, Average weight per bushel. Lists various barley varieties.

An exchange speaks of the largest creamery in the world, which it says is at St. Albans, Vt. The capacity is 22,000 pounds per day. The cream is brought to the place by railroads, which get it from the separators that are located all over the state. The milk from 15,000 cows is used, and 3,000 pigs are fed with the buttermilk. This is truly buttermaking on a gigantic scale. When any part or development of agriculture is summed up in this way, one realizes how large a share of the business of the world the farmers have. Farmers should respect their own profession—for it has come to be that—and speak of it as it is, and not as one that is unprofitable, in which a man by hard labor barely makes a living. Speak of it as the one business in which a man is thoroughly independent, and one on whose prosperity depends the prosperity of all others.

The Winter Care of Cattle.

When the farmer has provided good, warm, comfortable stables and sheds for his live stock, he is apt to think that he has done all that is necessary for their comfort, forgetting that, perhaps, in his anxiety to keep his animals warm, he has neglected to provide proper ventilation, and has thus shut in his stable, in the form of impure air, a more dreaded enemy than even Jack Frost. Mr. Smith, in Hoard's Dairyman, writes the following on the care of cattle:—

Those who have built good, warm barns and sheds have taken one of the most important steps in order that their cattle may have healthful winter quarters. Yet good buildings are not all; cleanliness about stables and sheds, and all other buildings in which animals are housed, is just as important to the health of the animals as cleanliness about the house is important to the health of the family. The ventilation of stables and cattle sheds should especially receive attention. Dr. N. S. Townshend says: "No disease is spreading more alarmingly among our better bred and most carefully housed cattle than tuberculosis. No cause of this disease is believed to be more potent for mischief than keeping the stock where there is insufficient air space, and where the air must of necessity be breathed over and over again. Yet how rarely do we find a shed or stable where the whole air of the interior is not laden with animal odors, the products of respiration or of other secretions." About most farm buildings throughout the winter, means of disinfection need to be used occasionally. Sulphurous acid gas, obtained by burning brimstone upon shavings, is given by those of experience as probably the best disinfectant for all buildings that can be tightly closed, although chloride of lime will, in some cases, be more convenient and perhaps equally effectual. To prevent the spread of contagious diseases, not only must disinfectants be used, but rigid separation and isolation are necessary.

Again there are hundreds of farmers whom it will pay to spend some leisure time in refitting their barns and sheds, nailing on loose boards as well as fastening up cracks about the stables to shut out the cold and make them comfortable. There are still others who own large herds of cattle which they do not expect to shelter, and will feed sparingly. This class make no pretence at winter dairying, and are not able to do much at it in the summer. It is sad to witness the suffering of the animals, and it is strange why some practices are continued where they are not only cruel to the stock, but the owners lose by them thousands and thousands of dollars. It is hard for the western farmer or herdsman to realize that, although the dairy cow may live through the winter, unprotected from the winter's blast, and poorly fed, yet she cannot be of profit for the shivering cow cannot produce a bountiful flow of milk, neither will the little that she does give contain the amount of butterfat that it would if the donor was warmly kept.

The importance of having stables ventilated in accordance with correct principles of hygiene is generally admitted. That the supply of fresh air should be ample is frequently insisted upon, but the need of the abundance of light is not so generally recognized. On this subject the London Live Stock Journal has the following pertinent remarks:—

Some stables are at mid-day in a state of semi-darkness—a condition, to say the least, anything but conducive to the well-being of the horse. No animal enjoys the light of day more than he. In his wild state he frequents the open plain or mountain side in the full light of day. Wild horses are never found to inhabit gloomy forests or dark ravines. The horse is a child of light, and he should be treated accordingly in domestication, if he is to be kept in perfect health and spirits, with his eyesight unimpaired. The frequent transition from a dark stable into the full glare of day cannot fail to act prejudicially on his visual organs, and so also must almost permanent gloom and darkness. If we studied only his comfort, we would give him at all times a stable full of cheerful light as well as refreshing air.

Mr. A. L. Crosby, in a recent article, makes some pertinent remarks. In connection with feeding dairy cows, he says: "It is easier to tell what a dairy cow does with her feed than a steer, for we have the milk as a daily guide, and when we find that one of our cows is a heavier feeder, and puts most of her feed into rich milk, that is the cow to tie to. She is a steam boiler that can be worked under heavy pressure, and if we watch the gauge and try the cocks we can afford to shovel the fuel into the fire box, knowing that there is no danger of loss of fuel or of bursting the boiler."

The Export Cattle Trade.

Mr. Robert Ironsides, M. P. P., member of the well-known firm of cattle exporters, recently favored us with the following interesting letter in reply to an inquiry as to the past season's cattle trade:—

"We have shipped 9,065 cattle to the Old Country market from Manitoba and the Northwest, the season of 1893, and paid on an average 3½ cents per pound for choice export cattle, weighed off cars at Winnipeg. The cattle were from two years and six months old up to five years old. Cattle, after they are six years old, are classed as oxen in the Old Country markets, and sell the same as bulls, stags and cows, etc. I believe this trade, as yet in its infancy in this country, is bound to grow to enormous proportions. As to the "embargo," I maintain, as I always did, that it will benefit Canada in the long run by compelling farmers to stall-feed and fatten their stock at home, and by applying the manure to enrich their land. Take, for instance, the experience of N. W. Balwin, Manitou, who feeds considerable stock every season. Last winter's manure from the stable was put out on part of a field and barley sown on the same. The yield of the portion manured was forty bushels per acre, while that part of the same field not manured only yielded twenty-five bushels per acre—an increase of fifteen bushels per acre from the manured portion, and if followed with wheat will show as great a difference in the yield, besides being of better quality. Therefore, I contend that it will pay a farmer to feed, even though he gets no more for his labor than the manure. One load of such manure is equal to a barn-yard full of rotten straw. Farmers are alive to the situation, and intend feeding large numbers for the spring trade. They are safe in stall-feeding, and will get 3½ cents per pound weighed off cars at Winnipeg (buyers to pay freight), for all choice export cattle in spring of 1894. I strongly advise them to do so, as they will make at least sixty cents per bushel out of their wheat, if fed, and receive the benefit of the manure on the land, which will yield ten to fifteen bushels per acre more grain with the same work, seed, etc. We would like to hear from the farmers (during the winter), in all portions of the Province as to numbers, feeding, and quality of same, so that we can arrange for handling them to best advantage when navigation opens in the spring. In conclusion, I would suggest that every influence be brought to bear on the Dominion Government to induce them to make an effort to have the senseless quarantine regulations existing between Canada and the United States removed, so that Manitoba and the Canadian Northwest may have the benefit of railway competition in shipping stock."

Canada's Export Cattle Trade.

The following item is clipped from a review of the past season's cattle export trade in the Montreal Witness, and will be read with interest by our readers:—

"The live stock export trade has been a disastrous one to the cattle shippers, many of whom have already gone under in consequence. There has been a heavy falling off all round. The failure of crops in Great Britain forced the British farmers to put their stock on the market just at the time that the best class of our cattle were going forward. This resulted in a reduction of prices and a consequent loss to shippers from America. The embargo which put a stop to the stocker trade is also responsible for the season's failure. It was not possible under this regulation to send over any lean cattle to be fed, or to send any fat cattle to be held for good prices. Our cattle, like those from the United States, had to be slaughtered at the port of debarkation. The result of this system was a loss of several hundred thousand dollars both to the Canadian shippers and the British farmer.

The falling off in the export of sheep has been much more marked than the cattle. This is owing to the large quantity of frozen mutton from Australia, which is being offered in the British markets. The following figures show the differences in the shipments for the last four seasons. It will be noticed that there has been a steady decline:—

Table with 2 columns: Year, Cattle, Sheep. Rows: 1890, 1891, 1892, 1893.

There has also been a decline in the shipment of horses and hogs, and of the latter what were sent across were shipped at a loss.

The great importance of the live stock trade may be understood when it is stated that \$3,312,572 were turned over in the business this year. Of this amount \$5,414,760 was paid to the farmers for their cattle, \$230,000 went to the railway companies for transportation, and the stock yards received \$41,650. Over \$50,000 was paid for attendance to 3,380 men shipped during the season. There was disbursed for feed \$125,100, most of which went into the pockets of the Quebec farmers. The cost of labor for putting up stalls, etc., reached the sum of \$145,782, while the steamship companies received nearly \$1,000,000."

Southdown Sheep—Their Claims to Public Favor.

[Read by Mr. John Jackson at the meeting of the American Southdown Breeders' Association, Chicago, Ill., September 27th, 1893.]

It has been said of sheep that they are the most valuable of all the animals that contribute to the wants of man, and are closely associated with his history, vicissitudes and progress from the earliest time. The origin of sheep is unknown; it may be traced back through vast ages into the mist of time's dark obscurity, and probably before the advent of the human race upon earth, for we find it associated with the son of the first created man—"Abel was a keeper of sheep." Search the Scriptures, and how closely we find it associated with the material and spiritual welfare of mankind, adopted as a symbol of purity in Christian belief, an emblem of patience, docility and forbearance. A careful observer, who would calmly survey the vast world of animated nature, would note the teeming millions of sheep, which contribute so much to the wants and comforts of mankind.

The thoughtful mind wanders from the scene around him, when contemplating this useful animal, how it has been developed and adapted to conditions opposite and extreme: be it upon the high, bare, desolate mountain, or the scorched plains of Africa, sheep are found suitable to the conditions of soil, climate and man's requirements. Modern civilization has not rendered sheep less important now than they were at earlier periods; they form the most essential of all food, and their wool is one of the most important materials connected with trading, manufacturing and pastoral industries of mankind. If this applies with more force to any one breed of sheep than another, I think it is the Southdown.

To realize the largest margin of profit should be the aim of every keeper of sheep. There are several breeds of sheep that are valuable for mutton and wool, and owing to the fact that different classes of wool are required to manufacture different sorts of fabrics, it will be necessary to continue to breed the various kinds of sheep.

What would seem to me the strongest claims which any breed of sheep can make for public favor would be their ability to return the largest possible value in mutton and wool for a given amount of food consumed. The question is not what a single fleece of wool or carcass of mutton will bring in the market, but rather how much is realized per acre when the product is fed to sheep.

The late Mr. Jonas Webb, who did so much to improve the Southdowns and bring them into public favor, built upon this very solid foundation. Before deciding upon which of the different kinds of sheep he would breed, he made careful and extensive experiments with the leading breeds of his day, till he was fully satisfied in his own mind that Southdowns would return more money in wool and mutton for a given amount of food consumed than any other sheep. This was what led him to breed Southdowns. It gave him unbounded confidence in the breed, and gave him encouragement through all the years in which he did so much for the breed, and to make for himself a name that is familiar wherever the Southdowns are known.

Southdown sheep may claim public favor by reason of several points in which their superiority can be shown. It is a well-established principle that the best results are obtained from animals that are given to early maturity—one of the predominant characteristics of the Southdown. They also produce a superior quality of both wool and mutton, which command a higher price per pound than that of other breeds.

By their early habits of having to travel long journeys in search of food on the rather bare hills in Sussex, they developed a high degree of endurance, with a strong constitution and plenty of muscle, and on account of their thick, even coat of wool they will stand exposure to storm, let it be rain or snow, better than most other breeds. In fact they are not hot-house plants. They were brought up to endure hardship, and to-day many of the flocks in England are exposed the year round to all the inclemencies of the weather, winter and summer, without shade or shelter.

They are prolific breeders; mature earlier perhaps than any other breed; will make a pound of flesh with as little, if not less, food than any other, and more of it on the most valuable parts of the carcass. This is where the profit comes in.

The fact that Southdowns possess all the most valuable points in a mutton sheep, coupled with unquestioned purity of breeding for centuries back, makes them most valuable for crossing on common sheep to improve their mutton qualities.

They have played an important part in improving all the other Down breeds, and the valuable qualities they possess largely depend on how much of the Southdown blood courses through their veins.

Southdown sheep, when placed in competition with other breeds on either side of the Atlantic, have more than held their own. In this country, however, the superior quality and value of Southdown mutton, as compared with that of other breeds, is not as well understood as it is in England, where the different mutton breeds have been so much longer known.

I shall, therefore, refer to the records of that country to establish beyond question the correctness of what I have claimed for this breed of sheep, and will quote as my authority the prize list of the Smithfield Club for 1891, in which there is published

a summary of champion prizes awarded, extending over a period of sixty years. We could produce evidence showing the victories Southdowns have won at other large shows in England, in Canada and in this country, when placed in competition with other breeds, but we consider the results or awards at the Smithfield the most reliable and highest authority attainable.

At that greatest fat stock show in existence, where all the breeds are brought out in the very pink of condition, from the year 1832 to 1861 there was offered yearly a gold medal for the best pen of wethers in the short-wooled classes; from 1861 to 1873 a silver cup was substituted for the medal, making a period of forty-two consecutive years that a prize was offered for the best pen of wethers in the short-wooled classes. The result was Southdowns won it forty-one times. (In 1872 it was won by Hampshires.) The only wonder is that Southdowns should lose it once out of forty-two years. (Possibly an error of judgment.)

At the same show, in the year 1860 there was added another prize; this was a champion prize of the value of fifty pounds for the best pen of sheep in the show, of any age, breed or sex. This was continued, with the exception of the year 1874, up to 1889—a period of twenty years—and the result was, Southdowns won eleven times, Oxfords three times, Lincolns twice, Hampshires twice and Shropshires twice, so that Southdowns won more of these champion prizes than all other breeds combined. And this was done where the quality and value of the different breeds was well understood.

Now, with regard to that very valuable characteristic, "early maturity." It is generally admitted that the sheep that gives the most profit is the one that goes to the butcher under one year old. Breeders make claims for their favorite breed; none will dispute the quality of the Southdown. Some have said "he is rather small." Facts and figures are stubborn things, and comparisons are the best way to arrive at correct conclusions. In this case I will take for comparison two other breeds, a long-wool and a short-wool: First, the Leicester, because this breed was about the first to attract much attention by its being improved by Bakewell, and commanding very high figures in that early day; second, the Shropshire, being a nearer relative of the Southdown, and a sheep that of late years has gained more popularity in America, perhaps, than any other breed. We take our figures from the official catalogue of the Smithfield Show.

For this comparison I have taken the twelve heaviest lambs of each of the three breeds at the show, and find the average weight as follows:—In 1885, Shropshires 145 pounds, Leicesters 160 pounds, Southdowns 175 pounds; in 1887, Shropshires 142 pounds, Leicesters 160 pounds, Southdowns 166 pounds; in 1890, Shropshires 162 pounds, Leicesters 145 pounds, Southdowns 167 pounds—or for the three years, Shropshires averaged 149 pounds, Leicesters 158 pounds, Southdowns 169 pounds. This shows the Southdowns have the advantage in actual weight of twenty pounds per head over the Shropshires, notwithstanding he has been dubbed as "rather small."

Canadian Shorthorns at Chicago.

The Hon. H. H. Hinds, Commissioner in charge of the Shorthorn herd at the World's Fair dairy trials, in his official report makes the following reference of special interest to Canadians:—

"To our Canadian brethren I desire to express thanks. I wish they would move their country over and all become Yankees. They have rendered me substantial and valuable service. They sent to my barn, charges prepaid, five excellent cows. At the close of the contest I had three strapping calves ready for the feed-lot to accompany them. They took the eight head back to Canada at their own expense, I only sending a man with the cattle as far as the quarantine station. I need not commence calling names, but in connection with the Canadian contingent, Mr. Richard Gibson, who selected the cows, and Mr. H. Wade, Secretary of the Canadian Herd Book Association and of the Ontario Commission, have placed me under personal obligations. In contrast, I have received no aid or comfort from any State Commission. The Illinois Commission say they will some time pay the freight to Chicago on the three cows from that State participating in the tests. Some of the other State Commissions have intimated that they would pay something to the owners of these cows, but up to date no dividends in that direction have been declared. I have applied to all the State Commissions having animals in my herd for aid in this connection. I did not want them to feel offended because I had slighted them. I have not, however, seen the color of any of their coin. Did we sacrifice, injure, or impair any cattle to this Moloch, the Columbian dairy test? No. One cow was killed in transit by the railroads, and another died within a few hours of parturition. Both causes kill cattle in this country almost daily. Neither cow had any part in the contest. The other cattle placed in my charge have all reached their home or Canadian quarantine. All are in the best of thrift and condition, and all are carrying more 'cow meat' on their backs than when I first looked them in the face. Many desirable sales of Shorthorns have already been effected, traceable directly to the creditable work of our cattle in this contest."

Feeding Grain to Hogs.

Mr. John Cook, one of the most intelligent and progressive farmers in Mersea, claims that even at the present price of wheat the farmer can make a good profit by feeding it. From his experience, he estimates that if it is fed to hogs it can be made to net nearly, if not quite, one dollar per bushel. He makes up his profit and loss account from feeding coarse grains as follows:—

3,000 pounds shorts.....	\$ 22 50
100 bushels wheat at 60c.....	56 00
50 bushels rye.....	40 00
150 bushels peas.....	75 00
50 bushels peas and oats.....	25 00
925 bushels corn in the ear.....	190 00
	\$448 50
Live hogs sold, valued at.....	\$720 00
Lard.....	9 00
Pork used for home consumption.....	50 00
	\$779 00

Thus making a total profit on the operation of.....\$330 50

In addition to the above profit he has opened up a home market for his grain, and has been saved the cost of drawing it to market, and has made 70 per cent. on the value of the grain consumed. Another writer, after charging for his wheat \$1.25 per bushel, finds that he has still a slight profit left. In addition to the above, there is another gain in the manure which is left on the farm, for both science and practice agree that there is no surer way of impoverishing a farm than by selling wheat and other grains.

Chemical analysis place the amount of valuable plant food—nitrogen, phosphoric acid and potash—in a ton of wheat or coarse grain as considerably above that in a ton of live swine. Now, if for the sake of illustration, we say that they are even, and take the calculations from the Ottawa Experimental Farm, which show that five pounds of frozen wheat will make a pound of pork—and good wheat should do better than this, but if we take this amount as the standard—then five tons of wheat will produce one ton of pork. Therefore, when we sell one ton of pork we keep the fertilizing material of four tons of wheat on the farm. Now analysts say that at the present price of fertilizers these four tons of wheat will take \$20 worth of nitrogen, phosphoric acid and potash from the soil.

From this it is easily seen, in feeding wheat to swine, that for a ton of live weight sold, the farmer saves in plant food that which, if he had to buy at current prices, would cost him \$29.00.

Each farmer should consider this question thoroughly and then decide for himself when everything is taken into account, whether it will pay him to sell his wheat to the dealer, or if at present prices it would not pay better to dispose of it to his hogs on his own farm, and thus save both the cost of marketing and the fertilizing material contained in the wheat.

We would like to have the experience of a few more intelligent and observant farmers. Why should not every farmer send in his experience in feeding hogs and other stock. We can all learn from the success or failure of others. Let us hear from you.

Chatty Stock Letter from the States.

FROM OUR CHICAGO CORRESPONDENT.

The Christmas cattle sales are averaging better than a year ago, although the extremetop prices of last year have not been exceeded. In these so-called hard times the following prices for holiday beefs look quite encouraging: Fourteen Herefords, 1742 lbs., \$675; 31 Shorthorn, 1713 lbs., \$665; 30 Shorthorn, 1721 lbs., \$655; 15 Angus, 1467 lbs., \$650; 27 Angus and Shorthorn, 1740 lbs., \$625; 30 Angus, 1386 lbs., \$600; 27 Herefords, 1427 lbs., \$600. Distillery steers, 1376 lbs., sold during the week at \$5, and 1451-lb. distillery stags at \$4.65. Most of the cattle sold above \$5.90 were Shorthorns. Fifteen loads sold above \$6 and eighteen loads at \$6 in one week, showing a pretty good quality of offerings. Common 1327-lb. native steers sold at \$3.55, some choice 980-lb. steers at \$4.25, and 1373-lb. Herefords as high as \$5.70. Extra fine 1225-lb. steers sold at \$5.50, yearlings averaging only 1145 lbs. as high as \$5.50, and "double extra" 1056-lb. steers at \$5.25.

The hog market has joggled along on a \$5 and \$5.50 basis. The packers thought they had it all their own way but were somewhat mistaken at the small receipts. Farmers are selling hogs freely to raise cash, but the "visible" supply of hogs now ready for market is certainly small for this season of the year.

Supplies of sheep have been too heavy lately, and the market has been much depressed.

The Christmas Fat Stock Show consisted of about four carloads of cattle, one of hogs and one of sheep. Like the one held last year, it was merely a made shift, and was a "walk-away" for the few exhibitors represented. Something adequate in the live stock exposition line is expected to be presented by the Illinois State Board of Agriculture next year. The only Canadian was Wm. Rutherford & Son, of Roseville, Ont.

Prizes for sheep were awarded as follows: Pen Southdowns—First premium, J. H. Potts; second, William Rutherford. Shropshire—First premium, William Rutherford. Oxfords—First premium, William Rutherford. Cotswolds—First premium, William Newton & Son. Leicesters—First premium, William Newton & Son. Merinos—First premium, William Newton & Son. Cross-bred—First premium, William Newton & Son.

Clydesdale Meeting.

The Annual meeting of the American Clydesdale Association, as heretofore announced, was held at the Grand Pacific Hotel, Chicago, Tuesday evening, November 21st, 1893.

The membership in attendance, or represented by proxy, was about one hundred and fifty, which is less than one-half the number of stockholders. There was no lack of interest in the meeting on account of the limited attendance, and the enthusiasm resulting from Columbian victories was a marked feature in the proceedings.

President Clarke, in calling the meeting to order, congratulated the membership on the unusually large amount of new business transacted during the past year, and referred to the grand show of Clydesdale horses made at the World's Columbian Exposition.

The report of the Treasurer, William Moffatt, showed a balance in the treasury of \$2,933.83, after paying all the current expenses of the year, the publication of Volume 7 of the Stud Book, and the settling of the prizes for the Columbian Exhibit of Clydesdale horses, amounting to \$4,350.00.

The Clydesdale Association, since its organization, has given encouragement to the breeders of Canada and the United States by offer of premiums exceeding \$15,000, which unprecedented offer by a draught horse association has had much to do with the great and growing popularity of the Clydesdale horse. No better investment has been made by the Clydesdale Association than the liberal prizes, amounting to \$5,000, that brought to the Columbian Exposition the grandest lot of Clydesdale horses ever exhibited together.

The members in attendance at the late annual meeting decided upon a number of new and important measures that will doubtless encourage breeders to improve their stock, and in the near future increase the claims of the Clyde as a leading candidate for popular favor as a serviceable and attractive draught horse.

The unanimous adoption of the plan favoring advanced registry for superior specimens of the breed will do much to aid in directing the attention of breeders to the best class of stallions and mares.

The matter of advanced registry has been referred to a special committee, consisting of Robert Ogilvie, Madison, Wisconsin, Robert Holloway, Alexis, Illinois, and Robert Miller, Brougham, Ontario. The report of the committee giving an outline of the plan to be pursued in the selection of sires and dams worthy of admission to the approved class will be published hereafter.

The association voted to publish in Volume 8 and succeeding volumes of the American Clydesdale Stud Book, without charge to the owner, a list of the duly recorded Clydesdale stallions and mares awarded first prize at the leading agricultural exhibitions of the United States and Canada during the current and subsequent years.

Reference will be made hereafter to a number of new and popular features adopted by the association.

The following officers will serve the association during the ensuing year, viz:—President, N. P. Clarke, St. Cloud, Minnesota; Vice-President, R. B. Ogilvie, Madison, Wisconsin; Secretary, Charles F. Mills, Springfield, Illinois; Treasurer, William Moffatt, Paw Paw, Illinois.

The officers named above and the following constitute the Board of Directors: Robert Holloway, Alexis, Illinois; L. B. Goodrich, State Centre, Iowa; and Robert Miller, Brougham, Ontario.

The Ontario Agricultural College Sale.

On Thursday afternoon, the second day of the Provincial Fat Stock Show, the authorities of the Ontario Agricultural College held their annual sale of surplus stock, comprising pure-bred cattle and swine.

Room had been allotted them in the Victoria Rink, the building in which the Fat Stock Show was held, and intending purchasers had ample opportunity to inspect all classes of cattle and swine before the sale began.

Some good things were offered and the stock generally was in better condition than at any of the previous sales. Good specimens were in demand both among the beef and dairy breeds of cattle, and pigs of all kinds sold well when fair representatives were offered.

The following is a summary of the prices realized:—

	Average.	Total.
Two Shorthorn bulls sold for \$90 and \$105, respectively.....	\$ 97 50	\$195 00
One Hereford bull.....	70 00	70 00
One Aberdeen-Angus bull.....	30 00	30 00
One Galloway bull.....	105 00	105 00
One Devon bull.....	36 00	36 00
Two Holsteins, one bull and one heifer, \$22 and \$35.....	28 50	57 00
Two Jersey bulls, \$31 and \$50.....	40 50	81 00
Three Ayrshires, two heifers and one bull, \$33 to \$20.....	89 33	268 00
Two Berkshires, farrowed Nov. 6, 1892, sold for \$30 and \$41.....	35 50	71 00
Nine Yorkshires, farrowed March 28th, 1893, sold from \$12 to \$20.....	17 77	160 00
Five Yorkshires, farrowed May 24th, 1893, sold from \$8 to \$16.....	12 00	60 00
Eight Yorkshires, farrowed June 2nd, 1893, sold from \$10 to \$20.....	15 32	122 56
Five Yorkshires, farrowed June 30, 1893, sold from \$8 to \$14.....	11 40	57 00
Seven Yorkshires, farrowed Sept. 21st, 1893, sold from \$7 to \$12.....	9 71	67 97
Three Tamworths, farrowed April 19, sold from \$8 to \$24.....	13 33	40 00
Two Tamworths, farrowed Sept. 10, 1893, sold from \$9 to \$10.....	9 50	19 00
Two Tamworths, farrowed Sept. 20, 1893, sold from \$8 to \$10.....	9 00	18 00

Our Scottish Letter.

Work is so pressing just now, that I have no time to do justice to the readers of the FARMER'S ADVOCATE by writing anew. The following extract from a lecture delivered lately at West Calder, on Clydesdales from 1871, may be of interest to some Canadian readers:—

"In the year 1873, the Highland Society held a very fine show at Stirling. The late Alexander Galbraith's great chestnut horse Topsman (888) was first aged stallion, followed by a horse of quite a different type, the late Samuel Clarke's Young Lorne (997). The produce of Lochfergus Champion were figuring in the showyards about this date. He was not a sire who created sensations, but for steady, plodding, enduring work he takes very high rank in the Clydesdale records. His representative on this occasion was the late Peter Crawford's Young Scotsman (1030), own brother to the same owner's Scotsman (759), which was three years older. The two most notable horses at this show, however, were not amongst these; they were the third prize three-year-old and the second prize yearling colts. Their names respectively are Time o' Day (875) and Darnley (222). The former was beaten by both Prince of Kilbride (660) and Prince Arthur (623), two big horses; but not many remember them while the little fellow, as he might have been called, can never be forgotten. He was during that season the Falkirk premium horse. In the two following seasons he was the Glasgow premium horse, and in 1875 he was first at one of the grandest shows of the Highland Society ever held in Glasgow. Time o' Day was a horse which made himself look big whenever he came into the show-ring. He never stood wrong. Like his granddaughter, Moss Rose, he understood the business, and faced his audience, meaning to win. He was none of your loose-kneed gentlemen who want a blow under the lower jaw every now and again to make them keep up their heads. He was not over big, but he had the right sort of feet and legs and action, and he lives, while the two big fellows that beat him are all but sunk into oblivion. The dam of Time o' Day was Lily of Drumshang, one of the best mares in Ayrshire, and a well-known prize winner. His sire, Ivanhoe II., was the son of a son of Sir Walter Scott and London Maggie, and a Knockdon prize mare named Brisk. He was the sire of Rosebud, the dam of Moss Rose, of Hatton Bella, the dam of Lord Erskine, of Scottish Princess, the dam of Lord Blantyre—the best stallion bred in Scotland during the past fifteen years, if he were sound—of the Kenmuir Mature, the dam of Gallant Lad, Crown Royal, and the Canadian Bessie Belle, and of the Whittlebury, now the Edengrove, Flora Macdonald, as well as her full brother, the tight, well-coupled, active horse Blantyre. Concerning Darnley, I have nothing more to say than to summarise all that can be said—he is up to this time the greatest Clydesdale stallion of the nineteenth century. The problem before any and all living horses is to break Darnley's record as a prize horse, as a sire of prize winners, and as the sire of the sires and dams of prize winners. It is a threefold cord by which Darnley's record hangs. One strain may go, but still it endures; all must snap before it falls. The mares in 1873 were almost as good as the horses. Keir Rose, a noble mare, but, as I have already hinted, of unknown breeding, was first in the brood class. I cannot say that ever I saw her; but one of the best specimens of a draught mare ever seen by me was her daughter, Keir Young Rose (3658), one of the first of the numerous progeny of Darnley, and dam of the magnificent mare Keir Rose III., so well-known to visitors to Keir as the dam of the stud horse Ethiopia (5750). The Darnley mare had all the wealth of form and substance, and that mysterious breeding-like character so easily recognized in the female progeny of her sire. A gelding of the same age, also by Darnley, was a well-known member of the Keir stud for many years, and his match is more eagerly sought for than found. Ethiopia has good blood in his veins, from his maternal ancestors. Several of the prize winning mares at the show of 1873 were from the Keir stud, and there were also numerous other females of note in the prize list. The first brood mare was the celebrated Knox Rossie, with Dunmore Prince Charlie a foal at foot, Young Darling, half-sister to Prince of Wales, and owned by Mr. Drew, was second brood mare, and the same gentleman was third with a breeder-unknown mare, and fourth with London Maggie, although then fifteen years old. In the mare in foal class Mr. Archibald Johnson, Lochburnie, was the owner of the first three-year-old filly Maggie of Lochburn (800), a superior mare got by Young Campsie (929); but probably the female Clydesdale which attracted most attention was the first two-year-old filly Maggie Craig, exhibited by Mr. W. Craig, Craig Villa, New Cumnock. She was got by the well-known Kintyre breeding horse Largs Jock, and was out of the same dam as a powerful big stallion which subsequently claimed some attention—namely, Ferguson's King William (437). Maggie Craig was unfortunately, for this country, sold for exportation to Australia, and consequently we can only speculate on what she might have done. The first yearling filly was probably the best show mare ever bred in the Lothians. She was bred by Mr. Hardie, Borrowstoun Mains, and eventually becoming the property of Mr. Martin, is perhaps commonly remembered now as the

Auchendennan Rance, although she ended her days at Montrave. The show of 1873 was the first at which Mr. Drew exhibited mares of unknown breeding, and presumably of English origin. In what time remains to me now, I purpose passing under review the majority of the mares of this class which afterwards appeared in the national show-yard, leaving detailed reference to all other prize stock until a more favorable opportunity.

The mare and filly of this class, with which Mr. Drew gained third prizes in 1873, I have not been able to identify. It is not, however, I think, going beyond fair criticism to say that, had they afterwards distinguished themselves as breeding mares, their identity would not have been lost. The tenant of Merryton was not an exhibitor, but he was a judge at the show held at Inverness in 1874. That meeting is probably chiefly noteworthy now, so far as the female classes are concerned, as being the first at which Mr. Andrew Montgomery was an exhibitor. He was third in the class of mares in foal with the good old mare Nanny, bred at Battrra, and got by Lochfergus Champion. At the show held at Glasgow in 1875, Mr. Drew was well forward in the battle, and two of his exhibits were undoubtedly amongst the best mares he ever imported. The first brood mare with foal at foot was the massive short-legged chestnut mare Mary, the dam of the Lord Harry which on the same day was first in the class of yearling colts. Mary was a good example of the best class of English mares—the class, the purchasing of which somewhat extensively by Mr. Drew, first gave the breeders of Shires in Derby and the Midlands, generally, a hint of the type of mares to aim at and breed from. There was something about mares like Mary which, in spite of characteristics not quite after the Scottish pattern, caused them to be viewed with favor by Clydesdale breeders. There was certainly no attempt to boycott them in the Scottish showyards. Often unpopular in color, as we shall see, Mr. Drew's mares never suffered on that account in the show-ring. If today we can trace comparatively little of their influence in our breed, it was not because they were at all handicapped in show competitions. I do not know of any descendants of Mary worthy of recognition in good company, except a mare by Newman, owned by Captain Stewart, of Knockrioch, which has been shown at Ayr; and her companion mare at Glasgow in 1875 I have not been able to identify.

Mr. Riddell gained first prize in every class of stallions at Aberdeen in 1876, his horses being Baron Keir (34), Luck's All (510), King of the Princes (2203), and King o' Scots (1172). Mr. Drew was not an exhibitor—his name does not occur in the catalogue, and I am not able to see that any of the female prize winners came through his hands. The first prize winners were great mares—namely, Garscadden Maggie (41), perhaps the most typical Clydesdale of her time; Mr. James M'Nab's Princess, from Glenochil, a first-class mare, daughter of Prince of Wales and a Tintock mare; the world-famed Kelso Maggie (426); a beautiful Time o' Day mare named Maggie, owned by a veteran breeder, Mr. John Anderson, Smithstown, Cumbernauld; and lastly, the all but invincible Auchendennan Damsel. The show of the Highland Society, held at Edinburgh in 1877, has always been regarded, and justly, by the advocates of an English cross in the Clydesdale as their Flodden. On that occasion Mr. Drew undoubtedly played some of his strongest cards, either directly or indirectly. In the class of mares in foal, three Merryton mares took tickets—namely, first and second prizes, and the very highly commended. He also took the very highly commended in the class of three-year-old fillies, and the fourth prize in the class of yearling fillies. The animals thus decorated were in order—(1) Keir Netty, which at the preceding Merryton sale in April had been purchased by Mr. Alexander Young for Sir Wm. Stirling Maxwell, Bart., at 650 gs., for long the highest price paid for a draught mare at public auction in Scotland, but now eclipsed; (2) the big chestnut mare Sheba, which in the following year was first in the brood mare class at Dumfries, with St. Vincent, a foal, at foot; (3) the best of all the English mares brought into Scotland, namely, the roan mare The Queen; (4) the black three-year-old mare Beatrice; and (5) a brown yearling filly. I have said that this was the Flodden of the advocates of the English blood in Scotland, and here is the proof. The mare which stood third to Netty and Sheba was Garscadden Maggie—be it observed, however, that she had a foal at foot competing with yeld mares. The first prize winners in the other classes were Rance (244) in the brood mare class, Coltness Sally (170) in the three-year-old class with the champion of the succeeding year, Lochwood Jess (1444) second, the Auchendennan Damsel, and a Strathmore yearling filly registered as Duchess of Glamis (653); and to crown what seemed to be the disasters of the day for the Clydesdale, the judges recommended that Netty's portrait should be painted and hung in the Board-room of the Highland Society, and there it is unto this day. I only wish that portraits of Netty and Garscadden Maggie had been taken ten years later, and hung alongside of it. I even wish these portraits could be taken now. Had this been done there would have been less ink spilled writing about the events of 1877 at Edinburgh. Scotchmen are not easily beaten. On this Flodden battlefield the Clydesdale Stud Book was founded.

Between 1877, and his death in 1884, Mr. Drew continued to show mares of the same class. Netty never again appeared in a showyard. Sheba, as has already been said, won at Dumfries in 1878, but subsequently passing into the hands of the late Provost Waddell, she died at Inch a few years later. The Queen continued to be shown with growing popularity at all the shows, and as late as 1883 was first in the brood mare class at Inverness. Of all her class, she offered to breed the best. A yearling colt out of her, and by Prince of Wales, was first at the Glasgow Summer Show in 1881. He is still regarded as perhaps the best yearling exhibited within the past twenty years. Unfortunately, he died shortly after the show in question. At the Merryton dispersion in 1884, the old mare herself was sold to Mr. Alex. Weir, Campbelltown. She bred several foals for him, one of them at least by Prince of Avondale, but none of them has been able to get as far forward as first at the local show. Sheba's only progeny known to me was the big powerful horse St. Vincent, by Prince of Wales. He left useful stock in Cumberland. Netty bred several foals. The best was a dark-brown filly by Newstead, which took prizes at Maryhill and other shows round Glasgow and passed into the Londonderry stud, where her descendants are still to be found.

None of the other English mares imported by Mr. Drew attained to the eminence of those to which reference has just been made. One which attracted more than an average share of attention was a two-year-old filly named Bonnie, which he showed at Glasgow Summer Show in 1876, where she won first prize. Like many more of the same class she became the property of Provost Waddell, but one searches in vain for almost any of the descendants of these mares amongst the prize winners of the past ten years. Time does not admit of fuller details being given, but Merryton mares that deserve honorable mention, ere we proceed to sum up, are—Minnette, the dam of Mr. MacGibbon's Minnie, which stood second to Moss Rose in 1884; Ruby, the dam of Rosebery; Juno, the dam of Prince of Avondale, Pearl of Avondale, and others; Topsy, a London cup winner, the grand-dam of Castle-reagh; that other mare, probably Bella, the grand-dam of Royalist, Darnley's Last, Queen of Hearts, &c.; Jessie Brown, the dam of Prince George of Wales, Prince Imperial, Lord Douglas, and other prize stock, the second best breeding mare of the Merryton class; and Flora, by Lincolnshire Lad, now known in Mr. Lockhart's possession as Galloway Lass, the dam of Grand Duchess, Premier Prince, Clarendon, Princess Royal, Pandora, and Orrialand, the best breeding mare ever brought to Scotland from England. There were also several mares got by Tagg's Lofty, otherwise Samuel Clark's Young Lofty (987), brought from Derbyshire, where he travelled for many years. Chief amongst these may be named Countess and Baroness, the former the dam of a filly by Duke of Hamilton (2074), which gained first prize as a two-year-old at Glasgow in 1882, and was exported to Australia. Other mares doubtless there are to which reference might be made, but these are the chief, and the closing question is—Considering their pre-eminence in the show-ring, the character of the horse with which they were mated, and the high positions which the immediate progeny of more than one of them have taken in the showyard, do the results amount to a demonstration that without this outside influence the Clydesdale breed of to-day could not have existed? Observe the question. We are not discussing whether the good stock descended from these mares are really good, but whether as good stock could not have been bred within the Clydesdale family as any which claim kindred with them. The evidence that the reply to this inquiry must be that they have been more indebted to the Clydesdale than the Clydesdale has been to them, seems overwhelming. Possibly there may be exceptions contrary to this proposition, but I cannot recall them. The proposition is—The outstanding good stock tracing descent from Mr. Drew's mares are either in-bred (see Prince Lawrence) or they have a double Clydesdale cross, and of necessity a cross of the Darnley blood. Castle-reagh, Royalist, Darnley's Last, Handsome Prince, and Mains of Airies all come under this category. The fillies by Prince of Wales, out of these Merryton mares, appear to have bred much better than the horses. Prince of Avondale may seem an exception to this rule, but his reputation as a breeding horse rests on three animals, all of which are out of typical old-fashioned Clydesdale mares, and the best one of the lot is out of a Darnley mare. In like manner all the prominent stock out of Merryton Prince of Wales mares are by well-bred Clydesdale horses, and nine-tenths of it by Darnley. In fine, it is not too strong an assertion that, taking prize stock and breeding stock as the test, without Darnley the Merryton race of horses would have sunk into oblivion. And therefore the conclusion is inevitable, that the Clydesdale could have survived and reigned supreme without extraneous aid, but the aliens would have gone out of sight but for the Clydesdale. To anyone disposed to make trial of the same methods as the late Mr. Drew, I would not say—Do not attempt it; but I do say that the experience of the past clearly shows that if he means to have any success in his work, and do any good to his neighbors, it is a preliminary *sine qua non* that the experimenter have Clydesdales of a high standard of purity existing alongside of the results of his experiments." "SCOTLAND YET."

Popular Geology.—No. 3.

BY J. HAYES PANTON, M. A., F. G. S.

At the rate of an increase of 1° temperature for every 60 feet descent, a temperature sufficient to fuse metals would be reached in about 30 miles. This is allowing the increase to be uniform; but such may not strictly be the case. However, the crust of the earth must be comparatively thin, compared with the rest of the material of which it is composed. There can be no question but vast masses of molten material exist in the interior, ready to escape when communication is made with it. With this eruption of molten material, volcanoes and earthquakes are associated. The origin of volcanoes is accounted for as follows:—

1. The union of chemical elements in the interior of the earth, which lead to a rupturing of the earth's crust and the ejection of so-called lava.
2. Settling of the earth's crust, causing cracks and the generation of intense heat.
3. The accession of water to the heated interior, its sudden change to steam, and a rupture of the earth's crust. This last theory has much in its favor, when we consider the location of volcanoes near the sea and the volumes of steam they emit during action. Earthquakes are closely connected with volcanoes.

The result of volcanic eruptions is the formation of mountains of *eruption*, which are simply deposits from the *crater* or mouth of the volcano. Great internal force is followed by upheavals, sometimes extending long distances, and giving rise to mountains of *elevation*.

Most mountain chains have been developed in this way; in other words, they result from a crumpling and elevation of the earth's crust, and afterwards become worn by the action of the atmosphere into the variety of forms we see them assume. There is another kind of mountain we may mention here, viz., mountain of *circumdendation*, which results from the material once around it all being removed, so as to leave the mountain only.

We have, therefore, three forms of mountains:—
I. *Eruption*, chiefly volcanoes. 2. *Elevation*, mountain chains. 3. *Circumdendation*, single forms.

II. Aqueous rocks, also called sedimentary and stratified.—These have been deposited in water as sediment, and afterwards solidified by agencies to be referred to afterwards. They are not so hard as the igneous; are in layers, showing a sedimentary structure, and usually contain fossils. Lake Winnipeg affords us a good illustration of how this sediment may collect. The Red River contains very muddy water by the time it reaches the lake into which it empties—so muddy that the water of the lake is muddy for 200 miles. It then appears clear, and passes out into the river at the north as clear water. What has become of the mud? It has settled in the lower end of the lake, so that vast deposits are collecting there, which in time will no doubt become solidified and add something to the earth's crust for future geologists to examine. Lake Geneva, in Switzerland, also furnishes an example of a lake into which muddy water is emptied and clear issues from the other side, leaving the deposits in the lake bottom. Most of our great lakes illustrate how aqueous or sedimentary may be formed. Aqueous rocks occur over wide areas in thick masses, and very little disturbed from their original position. They embrace our limestones, sandstones and clay beds. Some have estimated that the earth's crust is made up of 50 miles igneous and crystalline rocks, and three miles aqueous.

The following belong to this division:—

Chalk, largely formed from the decomposition of shells and corals; marl, a lime deposit in places once covered with water. This is very common in many parts of Ontario. It, too, is largely formed from shells. Stalactites, formed on the roofs of caves, and stalagmites, upon the floor, together with gypsum, coal and salt, are placed among aqueous rocks.

III. Metamorphic rocks include rocks which seem to have undergone great changes since they were first deposited, as many suppose, like aqueous rocks. They are very hard, bearing a close resemblance to igneous rocks. They occur in layers, and usually have no fossils.

From their stratified structure, it is inferred that they have been originally deposited as aqueous rocks and afterwards changed.

These rocks occur in large masses throughout Muskoka, Quebec, east side of Lake Winnipeg, and scattered over our fields as *boulders*, often called *hard heads*. They were likely derived from the first rocks that came into existence, and hence we might naturally expect to find them of much the same composition.

Examples of them are seen in our beds of *slate*, *mica*, *talc*, *marble*, *graphite*, *apatite*, *quartzite*, *iron ores* and *gneiss*. This last is a very common rock, made up of feldspar, mica and quartz, the same composition as granite; but in gneiss these minerals are in layers, while in granite they are

mixed together in a confused mass. Most of the boulders in our fields are gneiss. It has been observed that, where a stream of lava flows over beds of clay, coal or chalk, they have a tendency to change to slate, graphite and marble.

Hence the conclusion regarding the origin of metamorphic rocks is, that, after their deposition as ordinary aqueous rocks, they were submitted to the action of *heat* in conjunction with *moisture*, under great pressure.

How Best to Keep Up and Increase the Fertility of Our Soil.

This is a question of paramount importance to every tiller of the soil, be he gardener or farmer. The importance of this will be more readily seen when we remember that it costs just as much in labor and expense to raise twenty bushels per acre on poor land as it does to raise forty bushels per acre on good land. In the former case we may pay expenses; in the latter case there is room for a handsome profit. One of the first steps to be taken is to increase the amount of stock kept on our land. I believe that system of farming is nearest perfection in which the greatest amount of the farm produce is consumed on the spot, and the revenue is derived almost wholly from animal products. The class of stock to be kept will, of course, depend very much on the natural tastes of the farmer, for, while one man can make a success of dairying, another would make a failure of it, simply because his tastes did not lie in that direction, consequently he lacked the ability to apply himself so closely to detail as is necessary for ultimate success. The adaptability of the farm should also be considered, for while one farm may be of little use to the cattleman, it may be the very thing that the shepherd would delight in. So, in deciding the class of stock to be kept, the tastes of the farmer and adaptability of the farm must alike be consulted. But it may be urged that most farmers are carrying more stock now than they are able to feed and care for properly. Then, I say, increase the stock-carrying capacity of your farm by raising such crops as will supply feed in greater abundance than those you have been accustomed to raise—such as turnips and corn, or roots of any kind.

It may be said that few farmers have a root-house or a silo. Well, build a root-house—a very good one can be built for a mere trifle, and as for the silo, I am not inclined to look upon it as a necessity by any means, but rather as a convenience. I have been very diligent in reading up all the best authorities on the silo question that I could get my hands on, and I have arrived at the following conclusion: First, that the feeding value of the article placed in the silo is not increased in any way, excepting the advantage of feeding it in a succulent state; second, there is considerable risk of waste, even in the best managed silos, for while a man may be able to feed his ensilage without wasting a pound one year, the next he may not be so successful, and will find his ensilage spoiled around the sides and in the corners, resulting in a serious waste. But then it must be admitted that the silo is the most convenient way in which a large quantity of bulky fodder can be preserved, both as to economy of space and labor. By its use the corn can be hauled in and placed in the silo as soon as cut, and you get it off your hands in a very short time; whereas with the fodder, it has to be bound and shocked and then hauled in, and the greatest care taken to keep it standing straight in the barn. Then it can be run through the cutting-box only in small quantities at a time, for fear of it moulding. The farmer who has not a silo, and does not feel able to afford the outlay necessary in building one, will be making a long stride in the right direction who raises a goodly quantity of fodder corn, and a good supply of roots to feed with it. One acre of corn, if it is a fairly good crop, will produce as much winter feed as five acres of hay, and, if properly handled, it will be fully equal to, if not better, than the best timothy hay.

Another good fodder crop for cattle or horses is peas and oats, sown very thickly and cut green. On fairly good land it will produce three tons of excellent hay per acre, fully better than timothy. Moreover, it is an excellent crop for cleaning the land, especially of Canada thistles. The land for this crop need not be plowed until after the thistles get a good start in the spring; this of itself gives them a check, and then the crop grows so thickly that it fairly smother them out, so that when you cut it you will find only a few yellow, sickly-looking thistles among it, and cutting them at this stage materially weakens them again, so that by proper fall cultivation they will be so thinned out as to give little trouble the next year.

Another good way of increasing the stock-carrying capacity of our farms is by decreasing the amount devoted to pasture and sowing a few acres of soiling crops, to come in at different times and furnish a succession of green feed for the summer. Ten acres of soiling crops will keep as

much stock as thirty acres of pasture. So if it required fifty acres of pasture to carry your stock over the summer, you might decrease it to twenty-five, and sow say ten acres of soiling crop. This would carry over the same stock as the fifty acres did before, and leave fifteen acres more to raise winter feed on. Of course, all this means work, but it must be remembered that no good thing can be had without work.

Another way of keeping up the fertility of our farms is by a proper rotation of crops. While I do not say that the fertility can be increased by this means, I do say that soil exhaustion is very materially diminished. There is a wonderful analogy between the animal and vegetable world. Now any farmer knows that all classes of farm stock are not nourished by the same kind of food, and the same is true of the vegetable world. For instance, wheat requires a large amount of nitrogen for its growth, and is therefore a nitrogen consumer. Clover or peas, on the other hand, are nitrogen collectors, and leave the soil richer in this important element than they find it. It is evident, then, that by judiciously alternating a nitrogen consumer with a nitrogen collector, better results will be obtained than if each were grown on separate fields year after year. No fixed rotation can be given that would give equally good results on all soils. In this the farmer must be guided by his own judgment. For instance, a rotation that would suit a dairyman might not do for a man who followed a different line of husbandry, so that not only the soil but the requirements of the farmer must be taken into consideration in mapping out a rotation. Then, again, the market must be considered. For instance, a few years ago barley was the most profitable crop of grain we could grow, but since the bottom went out of the barley market we were compelled to change our rotation so as to devote a smaller area to barley and increase the acreage of some of the other crops. I do not recommend the adoption of a certain rotation and then sticking to that through thick and thin and trying to adjust the circumstances to the rotation, but rather the adjusting of the rotation to the circumstances.

Still another way of maintaining the fertility of the soil is by drainage. Not only can the fertility be maintained by this means, but it can be considerably increased. This last statement sounds a little strong, and perhaps I had better take it back and modify it a little, for drainage adds nothing to the soil, and therefore, strictly speaking, cannot add to its fertility; but it renders available the plant food already in the soil, and so increases the production, so it amounts to the same thing in the end, for plant food in the soil is of no use to the farmer unless he is able to convert it into a marketable product. Drainage makes this plant food available by removing the surplus water, and as all nature abhors a vacuum, when the water is taken out the air gets in, and, by its chemical action, so changes the composition of the soil that elements of plant food that were before of no value are now in a condition to be utilized by the growing crop. Draining also raises the temperature of the soil, so that vegetation is much earlier than before. There are other ways by which draining helps to improve the productive ability of the soil.

A. P. K.

Improvements in Farm Machinery.

Many implement manufacturers at one time well known to the farmers of Western Ontario have, owing to keen competition, quietly dropped out of the race.

We will not stop to inquire the cause of these changes, but will briefly review the history of one of the most pushing and energetic implement concerns in the Western Peninsula. We refer to the Thom's Implement Works, of Watford, Ont. This factory has been in operation about nineteen years; for the past fourteen it has been under the direct control of Mr. D. Thom, to whose practical knowledge, business ability and careful supervision the success of this firm is largely due. Being of an inventive turn of mind, Mr. Thom soon began making improvements in farm machinery. His early farm training taught the needs of the farmers.

The fruit of his efforts can be seen in the many valuable improvements in farm machinery which this firm have made. Many of these improvements are covered by both Canadian and American patents.

Among the inventions which this firm has been the first to manufacture are the following:—That notable improvement in corn and root cultivators, the lever extension movement; the Watford Riding Plow, the only one having an adjustable draft clevis and gang wheel movement, regulating the width of the furrow from the driver's seat. Next came the Ripper Feed Cutter, a machine entirely new in principle and construction. Nearly one hundred machines have been already sold in Ontario, the most of which are in the hands of prominent stockmen, who claim that the Ripper has no equal in preparing constalks for food for live stock of all kinds.

To supply the ever increasing demand for their machines, this firm has found it necessary to put in a new engine and boiler, and to extend their premises by building a large brick addition. We would advise our readers to send for descriptive circulars. Address Thom's Implement Works, Watford, Ont.

Dentition and Dental Diseases of Farm Animals.

BY DR. MOLE, M. R. C. V. S., TORONTO, ONT.
(Continued from Page 475.)

DENTITION AS INDICATIVE OF THE AGE OF FARM ANIMALS.

From three and a-half to four years old the horse casts his lateral incisors, which are replaced by permanent ones. We generally find that the crown of the second molar comes off before the first, or they may both come off at the same time.

When young animals suffer from retarded dentition they lose flesh, the abdomen becomes tucked up, long, shaggy coat persists, tight skin, evil necked, thin thighed, a listless gait, with occasional diarrhoea, all evidence of mal-nutrition. In such cases, examine the mouth and remove the crown, if present, give a small dose of laxative medicine, and thus remove the cause.

When four years old he casts eight temporary teeth, and receives in their place twelve permanent, but horses do not seem to suffer so much at this period of their dentition as they do at an earlier age, although trainers of race horses say that a four-year-old cannot stand as much work as a three-year-old. When any animal is not doing well at this age, examine the mouth and, if necessary, remove the shells; the lower ones come off sooner than the upper. In many of these cases a small quantity of food has lodged between the shells and the permanent teeth, giving rise to a foetid smell of decomposed tissue very similar to the smell from diseased bone. The horse at four years old has the lateral permanent incisors in apposition, and the third and sixth molars are level, or nearly so, with the other teeth. The tusks of the horse appear through the gums at four years of age, but they are not well up before five and a-half years. We do not attach much importance to these teeth in intimating age at this period.

This drawing represents the state of the horse's mouth at the completion of his fourth year.

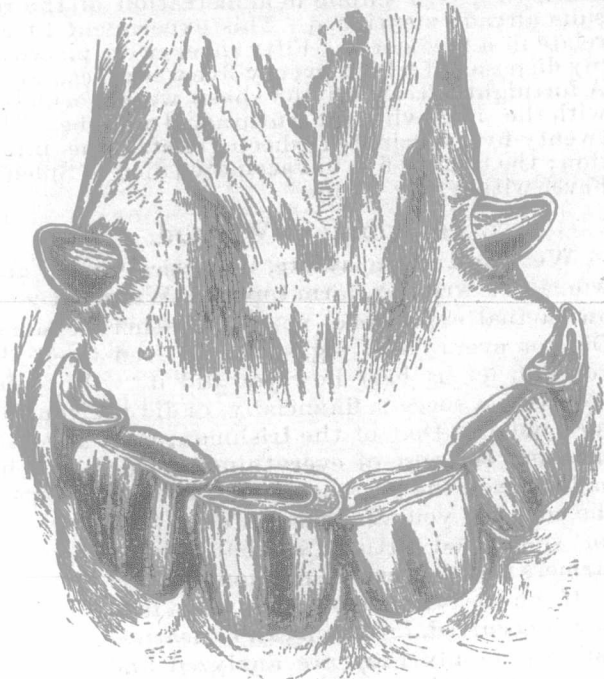


FIG. 8—4 YEARS OLD.

Between four and five years old the corner teeth are removed, and the permanent teeth occupy their place and are in apposition at their anterior edge, but their edges do not meet until the fifth year is completed; this can be seen by separating the upper and lower lips at the side of the mouth. The shell-like character of the corner permanent teeth is the special indication of five years old. The appearance of the mouth now indicates the approach of maturity. The inferior margin of the lower jaw still feels more full and rounded, and gradually becomes, from this time onward, sharp and angular, and the horse is what we term full mouthed. With the exception of young horses casting their teeth, and old horses with worn, uneven surfaces, on hard work, which do not crush or bruise their oats, give them whole, so that the animal can have the pleasure of grinding them, thereby getting the full benefit of the salivary juices and their action on the starchy matter.

In the next figure (Figure 9) the condition of the incisors in a five-year-old mouth is shown, and it is evident that the corner permanent incisors show but slight indications of wear, except on the anterior edge. The tables of the lateral incisors are fully formed by the central cavity being surrounded by a line of worn surface in the central incisors; the cavity has become extremely shallow. This completes the permanent dentition of the horse.

After the completion of permanent dentition the horse occupies an exceptional position among the animals of the farm in respect to the evidence of age which is indicated by the teeth. All animals exhibit distinct signs of wear in their teeth as age advances, but owing, as we have said before, to the composite arrangement of the structures of which the teeth are formed, the horse alone gives definite

evidence, which can be interpreted by a careful observer up to an advanced period of the animal's life.

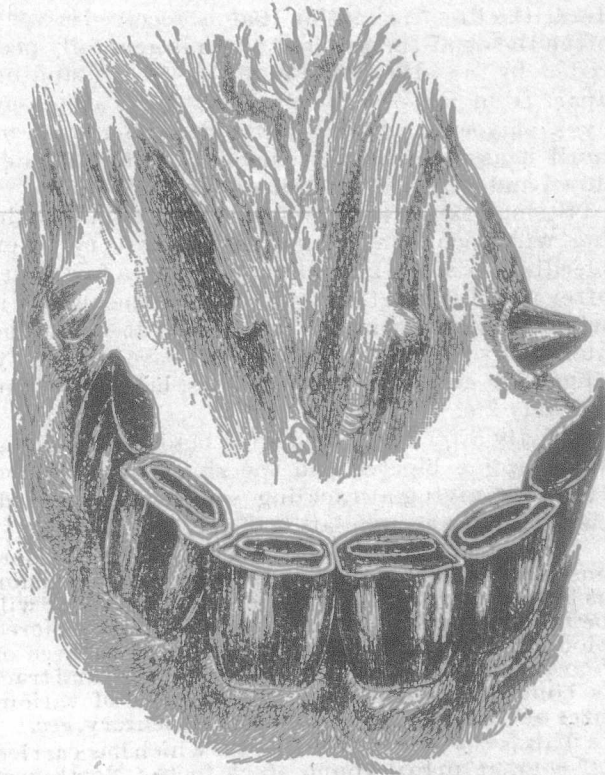


FIG. 9—FIVE YEARS OLD.

In the preliminary observations on the growth of teeth we pointed out how as age advanced the teeth took on a different shape—from being oval became square, the long axis of the first being horizontal and the second vertical. After five years, evidence of age is to be obtained by the inspection of the tables of the incisor teeth. At six years old, the tables of the lower central incisors have lost their mark, the cavity or infundibulum is worn out, and they are becoming elliptical or oval in form. The corner incisors are well in wear and the tables of all the incisors are well formed, the cavities in the laterals are shallow, the tusks are larger, sharp pointed and shelly. The horse's age is judged chiefly by the amount of wear which the corner teeth have sustained, although other marks are worthy of notice as confirmatory evidence. The corner teeth have lost their shell-like character (see Figure 9 compared with Figure 10) and a line of worn surface surrounds the central cavity, the line of wear is broader at the anterior than the posterior edge, and the cavity is still of considerable depth.

All of the above characters are shown in Figure 10.

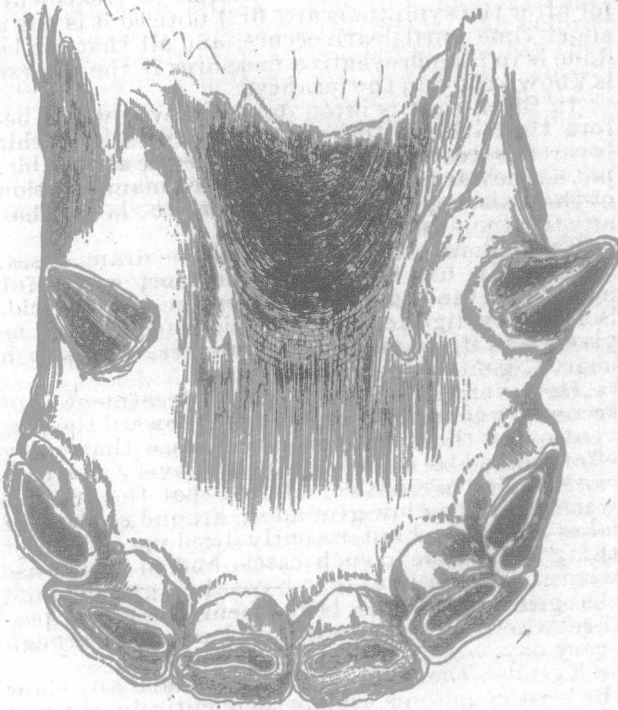


FIG. 10—SIX YEARS OLD.

At seven years old the tables of the corner teeth are perfectly formed and the cavity in each tooth is very shallow. The central enamel is well defined and forms an elliptical figure, which is nearer to the posterior than the anterior edge of the tooth; these teeth are also a little deeper from front to back than they were at six years of age.

The mark is becoming a thin line instead of a broad cavity.

The central incisors at seven years old have their sides elongated so that the table approaches the figure of a triangle, the mark is very near to the posterior edge of the tooth, the central enamel in the laterals is also altered in form, becoming more flattened, the tusks more blunted and worn.

Between the seven-year-old and eight-year-old mouth the difference is not very marked. Some care is required to be accurate, as more disputes arise about the teeth at this age than any other

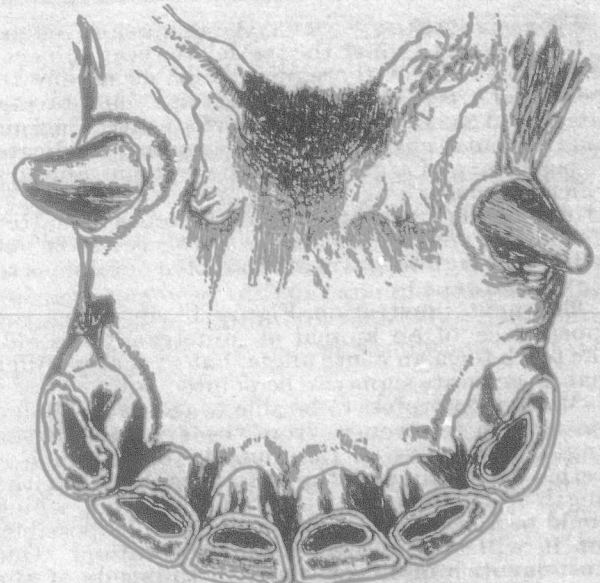


FIG. 11—SEVEN YEARS OLD.

period. The observer should examine every well authenticated age, and look rather closely at the tables of the incisors, the shape of the central enamel, and especially at the corner teeth, to get an acquaintance with their appearance, for in some cases the corner teeth show great wear; but if the difference in the length and the general aspect of the position of the teeth as they emerge from the gums is taken into consideration, a good and accurate opinion can be given.



FIG. 12—8 YEARS OLD.

In the eight-year-old mouth, the form of the tables of the incisors, the shape of the central enamel being only a small dot, affords very satisfactory indications of the age, the central teeth are more distinctly angular than they were at seven years, the central enamel is also triangular, all the tables of the incisors are worn as level as the different degrees of density will allow, the cavities are very nearly or quite obliterated by being filled up with tooth tissue, the central white enamel is well defined, the gum of the corner incisor has lost its circular form and become square, the tusks are quite blunted at the top. This is well marked in Figure 12.

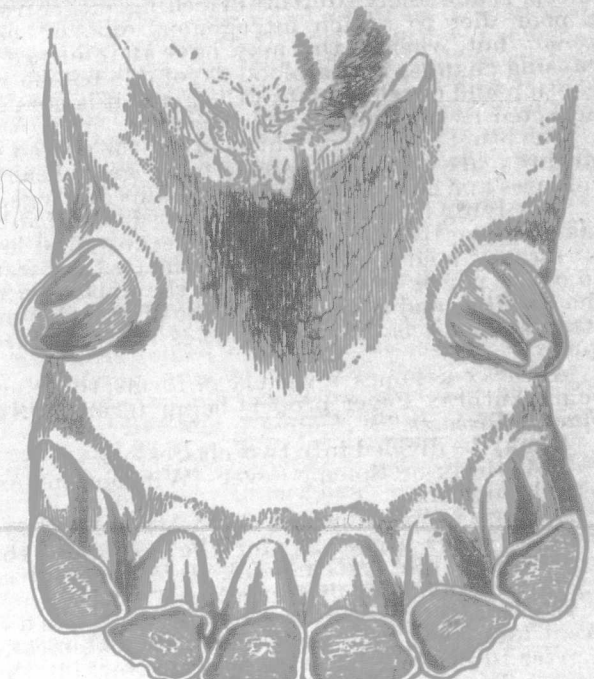


FIG. 13—AGED NINETEEN.

From eight to ten years old the changes occasioned by the wear to which the teeth have been subjected are not sufficiently regular to enable anyone to speak positively as to the exact age, but during this period the cavity in each lower central incisor and the centre circle of enamel remains to indicate its position, and a groove on the outside appears which is the mark of the fang or root of the tooth. After this the age of any animal becomes a matter of opinion, and the evidence of the teeth is not definite enough to warrant a positive opinion as to the animal's age.

The next illustration, Figure 13, indicates the appearance of an animal at nineteen years old. The teeth form an acute angle, but so many differ that no accurate signs can be pointed out.

Many men profess to be able to accurately judge the age up to twenty, from the evidence of the length of groove on the outside of the incisor teeth. To distinguish the difference between the length of this groove from ten to eleven, which would be about an eighth of an inch, is possible, but it will take a lifetime of observation. One must devote himself especially to the study of the subject, and have numerous opportunities of correcting his observations, to judge the age at such an advanced period of life.

Anthrax and Blackleg.

BY GEORGE P. WELLS, D. V. S., CALGARY.

This disease has become of such an alarming nature of late years in the Northwest, and particularly in some localities during the last year has it assumed such a serious aspect, that a short account of its history, characteristics and preventive measures should be directly interesting to stock-raisers.

I find that erroneous ideas exist as to its cause, etc., and it is a common remark among cattlemen where Anthrax exists: "Your stock must be too fat"—the idea being that the disease is caused by the extra good condition of the animal.

Now, while we find that it is a general characteristic of the disease to attack young stock, and it usually seems to be the best, it would be well to eradicate from our minds the idea that these conditions are essential to the disease, for they are not.

Anthrax will attack young and old, lean and fat, in any season of the year, although its ravages in this country have been nearly confined to young stock.

Anthrax under different names has one of the oldest histories; it has been studied more than almost any other disease, and can be traced in ancient history for centuries.

At different periods it was attributed to different causes, but it was not until about the middle of the present century, after it had been studied by many of the eminent scientists of Europe, that a very minute microscopic germ was observed in the blood of animals which had died of the disease; since which time this small individual, which is the cause of so much loss and is known as the "*Bacillus Anthracis*," has probably occupied more of the time of such great pathologists as Pasteur, Koch, Sanderson, and a score of others, than any other disease germ. From the observations of these men the following conclusion has been arrived at, and is now generally accepted:

"That Anthrax (and diseases of an Anthracoid nature) consists primarily in a special alteration and change in the blood, brought about by the extremely rapid development of a small organism known as the *Bacillus Anthracis*."

Now, the question will be asked, "Where does this germ come from?" This is unanswerable, except that we know it exists, and under conditions which favor its development will propagate the disease.

In opposition to the germ theory, other observers maintain that the disease, in cattle and sheep, is due solely to errors in feeding, either from a poor diet to a rich nitrogenous one, or *vice versa*; but, whereas this may have an influence in causing changes in the blood favorable to the reception and development of the germ, it is not now accepted as the source of the disease.

The other influences which favor the spread of anthrax are climatic changes from great heat to coldness and humidity, persistent rains and fogs.

Low-lying lands, morasses, the beds of dried-up lakes, along river banks which overflow, and low surfaces of land which may be inundated, all seem to be the places best adapted to the existence of the *Bacillus*, and the history of the disease demonstrates that it is in such localities it is most frequent.

Anthrax assumes a variety of forms, those not being Anthrax Fever proper being termed "*Anthracoid Diseases*."

It may be divided into two classes, viz.:-

1. Anthrax or Splenic Fever—Without any external eruptions.

2. Those forms which are characterized by tumors and other eruptions for the outlet of the poison from the system, and which are not so rapid nor fatal as the first form.

To the latter class are given many names in different localities, such as Blackleg, Blackquarter, Quarter Ill or Evil, Gloss Anthrax (attacking the throat), Trembles, Texan Fever, Braxy in sheep, etc.

SYMPTOMS.

In the first form (Anthrax Fever), the disease is very rapid, and the animal rarely recovers. Indeed, the first intimation that is received is very often the dead carcass, but death is generally preceded by the animal going off its feed, standing apart from the others, rough staring coat, glassy eyes, shivering and gradually becoming weaker until it assumes a staggering gait, and finally lie down and is with great difficulty made to move.

Stringy saliva will run from the mouth, breathing will become short and panting, very often bleeding from the nostrils, and within a few hours after noticing anything wrong with the animal it will succumb during a convulsive fit or in the quietude succeeding one. In a few cases they may linger for even two or three days, but almost invariably die.

Shortly after death, and often before, the animal will become bloated and the skin will be found crepitous, giving a crackling sound when pressed, caused by the accumulation of gas underneath.

If opened, the *post mortem* signs will be numerous and distinct enough to leave no apprehension as to its being Anthrax. The spleen and liver will be found very much engorged with dark colored blood, the former often attaining a size three or four times its normal one. The whole intestinal tract is congested, with dark colored spots of various sizes on the mucous membranes, mesentery, etc.

This is the form of the disease which has carried off a great many young stock in the Northwest during the last summer and fall, confining itself almost entirely to calves and yearlings.

In the external form, known as Blackleg, etc. the disease is not so fatal. The first observable sign will often be the appearance of the tumor itself on the surface of the body and on almost any of the fleshy parts, although if noticed the animal will be dull and listless and off its feed for some days before. It will often become lame and stiff in some particular.

If the tumors are felt they are found to be hot, hard, and cause pain when touched; the skin will soon become crepitous as gas is evolved, and if the tumor be then punctured it will emit a dark-colored fluid and a fetid smell.

When the tumors occur in the mouth or throat, as is nearly always the case with pigs, the tongue becomes very much swollen, of a dark bluish color, and usually covered with ulcers. The swelling generally causes death by suffocation.

It would take up too much space to enumerate the symptoms and peculiarities of the disease in the different animals, and I will conclude by giving a few hints on preventive measures and care of the sick.

TREATMENT AND PREVENTION.

In Anthrax proper, the form so prevalent here lately, the animal is not amenable to treatment, for after the symptoms are first noticed it is but a short time until death occurs, and all that can be done is to take preventive measures if the disease is known to be in the locality.

In Blackleg it is often days and even weeks before the patient either dies or recovers. In this form the sores may be kept as antiseptic as possible, but as they are merely the outward manifestation of the existing fever, it is toward the latter that any treatment must be directed.

The chlorate of potash in three dram doses, twice daily, has been found the most successful agent, as it tends greatly to keep the blood viscid. Soft, easily digested and nutritious food should be given, and if the patient convalesces, tonics such as iron, gentian, etc., can be given.

However, in nearly all cases, treatment is of secondary consideration, and it is toward the prevention of the spread of the disease that every effort should be made. In nearly every case that came under my notice, I found that the animals were feeding on low ground or around the beds of lakes which had but recently dried up. The first thing to be done in such cases, and in every case where it is possible, is to have their grazing land changed. If possible, bring them into a new pasture, where they can be watched and gone through every day.

Examine them all thoroughly, and if any show the least symptoms, isolate them entirely, the best plan really being to kill the animals and burn the carcasses as soon as satisfied of the existence of the disease. Setons inserted deeply in the dewlap have been found beneficial as a preventive, as they set up an artificial inflammation, which increases the coagulating properties of the blood—a condition greatly reduced by the disease.

Remedies such as the hypo-sulphite or sulphite of soda may be given with benefit: they are not expensive, and act on the blood as antiseptics or purifiers. Where there is a large bunch to attend, I have found that the only way of administering the medicine is to dissolve a sufficient quantity in the drinking trough.

The following is an instance of the measures taken on one ranch, with the result:—

When the disease was first discovered, it was found that about forty calves had already died on the range, and this must have occurred within a short time. As it was only attacking calves, I had all the rest, with their mothers, brought into a

fenced pasture and examined thoroughly. Four more were found with symptoms, which we immediately isolated, and I might add subsequently died. The rest were setoned and treated to hypo-sulphite soda in their water twice daily, with the result that since then (over three months), out of over 100 head, four only have been lost, whereas if they had been left on the range the whole lot would undoubtedly have died, as happened in several cases that I know of.

The carcasses of those having died of the disease should be burned in preference to burying them, or if the latter be done, they should be buried as deeply as possible and covered with quicklime. Too much stress cannot be laid upon the destruction of the carcass immediately. In one instance that I know of in the past summer, a rancher left a carcass that had died of anthrax lying out all night, with the result that a valuable imported sow and her litter made a meal on it, and were found dead the next day with every symptom of gloss anthrax. It will be unnecessary, then, to state that an animal suffering from this disease is totally unfit for food, and causes in man what is known as "Malignant Pustule" and certain death.

The greatest care should be taken at any attempts at *post mortem*, and it should not be tried without rubber gloves or some such protection.

If any animals die in a stable or building, it should be thoroughly disinfected.

Innoculation for anthrax with the weakened virus or vaccine of the *Bacillus* has been proved a success by the labors of M. Pasteur and other pathologists. The reducing of the virus to an attenuated state for vaccinating has to be accomplished with great care and accuracy, an account of which would be tedious, but its success is undoubted. I will conclude this paper by quoting an extract from a report by M. Pasteur, read before the International Medical Congress in 1881, in which he says, after describing the *modus operandi* of obtaining the vaccine:—

"The method I have just explained of obtaining the vaccine of Splenic Fever (Anthrax), was no sooner made known than it was extensively employed to check the splenic affection. In France we lose every year by Splenic Fever animals to the value of 20,000,000 francs (\$4,000,000). I was asked to give a public demonstration of the results already mentioned. This experiment I may relate in a few words. Fifty sheep were placed at my disposal, of which twenty-five were vaccinated. A fortnight afterward the sheep were inoculated with the most virulent Anthracoid microbe. The twenty-five vaccinated sheep resisted the infection; the twenty-five unvaccinated died of Splenic Fever within fifty hours."

Contributors Wanted.

We want wide-awake, practical men and women to write on farm topics. We want your own actual experience, not some other person's. Did you ever raise a pig, sheep, or even a hen? If you did, let us hear how you did it. Was the operation a success, financially, or did the venture turn out like that of the Irishman, who, after estimating the cost of everything, decided that he had made on the pig, but that he had lost a heap on the corn! If you were successful, give the reasons for your good fortune, so that other struggling farmers may be cheered and helped.

If, on the other hand, there was a loss, tell them how it occurred, for much can be learned from our failures if only they are analyzed and the true causes discovered. It should then be both a pleasure and a duty to set these facts before our brother farmers, to act as landmarks to keep the ship of the farm from striking on these sunken rocks, and thus causing leaks, which, though they may not sink the ship, will impede progress and perhaps cause the lightening of the ship by throwing overboard a part of the cargo.

Do your cows give more milk than those of your neighbors? Is your wheat crop better? Can you get the top price for all your farm produce? If you can give us the reasons—let us know in what points your methods differ from those of your neighbors. Remember that an interchange of experience will benefit all. Let us have a big basket of such letters in time for our next issue.

All that is wanted is for a few to start, others will then follow, and in this way the value of the FARMER'S ADVOCATE, as a medium for the exchange of ideas on farm topics, will be greatly increased.

Let the ADVOCATE become a sort of family table, around which all the members of the 25,000 homes into which the ADVOCATE finds its way may come together, discuss their work with one another, and this without leaving their own comfortable firesides."

The "Poultry Monthly," published by the Ferris Publishing Company, Albany, N. Y., is one of the most interesting exchanges upon our list. It is devoted to the interests of poultry and pet stock breeders and fanciers, is a large-sized, well-illustrated magazine, nicely gotten up and furnishing monthly the latest poultry news of the East, and has many eminent poultrymen among its contributors. We can cheerfully recommend it to all interested in poultry.

QUESTIONS AND ANSWERS.

Veterinary.

ANSWERED BY W. A. DUNBAR, V. S., WINNIPEG.

JOHN CLARK, Baldur:—"My mare had her shoulder rubbed by the collar a few days after fall work was done, and while resting a swelling the size of a man's fist came on. I have it reduced now to a lump the size of a walnut, but cannot get that away; it is hard and hurts her when pressed; it is on the point of the shoulder. Please tell me how to treat it."

The most expeditious way of removing the lump is to dissect it out with a knife, and apply daily to the wound until healed the following ointment: Sulphate of zinc and carbolic acid, of each three drachms; vaseline, four ounces. If you are not within reach of a veterinary surgeon, and do not feel disposed to use the knife yourself, we would advise you to use a strong tincture of iodine: Iodine, one and one-half drachms; iodide of potass., one drachm; alcohol, one ounce; mix. Paint the lump with the tincture once a day for three days, and then allow one week to elapse before next application. Repeat until the lump disappears.

SUBSCRIBER, Langrubby, Assa.:—"I have a cow with a lump in her throat; she has a very distressing cough; her appetite is good, but she does not thrive at all, but gets thinner. I have also a three-year-old steer that has had a bad cough all summer; he is also very thin."

The few symptoms you have mentioned are strongly indicative of tuberculous disease, a disease that has so far resisted curative measures. We would advise you to separate the two affected animals from the rest of your stock, and if possible have them examined by a competent veterinary surgeon.

E. J. H., Carduff, Assa.:—"Some weeks ago I had a horse go lame in the off hind leg. He has been running out all fall, and we concluded that it was simply a slight sprain and left him out. Last week we noticed that the horse had failed terribly, also that a large, hard lump had formed to the right of tail. We lanced same, and it discharged a quantity of matter, since then the whole leg has swollen up terribly to hock, and although I lanced it twice lower down there is no discharge. What is the best treatment?"

It will be advisable to make, if possible, a dependant outlet for the matter. Keep the parts soft by frequent fomentation with tepid water, and inject the pus cavities twice a day with lotion composed of carbolic acid and sulphate of zinc, of each four drachms; water, one pint. Give internally in bran mash every night for two weeks, hyposulphite of soda, half an ounce.

H. E. CHURCH, Dewdney, N. W. T.:—"A two-year-old gelding is very much swelled in the belly, with his coat rough and staring; the colt is very poor also. He has been this way for twelve months now. He eats well and does not seem in any pain. Last winter he was fed hay, and was running on the grass all summer. What is likely to be the matter, and is there any chance of curing it? His belly looks to be full of wind; his legs and head are perfectly free from any swelling; he passes dung freely."

The symptoms indicate that the unthrifty condition of your colt is due to worms in the stomach and intestines. Give, when the stomach is empty, in one dose, raw linseed oil, ten ounces; turpentine, six drachms; fluid extract of male fern, four drachms. Follow this up by giving morning and evening in small bran mash for ten days: Sulphate of iron, nux vomica and nitrate of potass., of each half a drachm.

ANSWERED BY DR. MOLE, 260 ADELAIDE ST. WEST, TORONTO.

BARRENESS IN SHEEP

JAMES DAWSON, Odessa, Ont.:—"Can you advise me how to cause my high-bred Shropshire ewe to breed? She slipped her lamb last year, and since that I have never seen any period. Will you please inform me what will bring about the desired end?"

No doubt that in your case the slipping of the lamb has caused her to miss breeding. This animal being so small very little mechanical aid can be given, but almost any veterinary surgeon can prepare a good "uterine stimulant," which will often produce the desired effect.

JOHN CAIRNS:—"Will you be kind enough to inform me what can be done for an old sore on my horse's shoulder. Every few weeks it gathers, breaks and discharges matter, and I would like to have it cured."

There is no doubt that your horse's shoulder has been bruised very deeply and severely, causing a small fibrous tumor to form; this, acting as a foreign agent, sets up the inflammation as you say periodically. Your best plan will be to consult a qualified veterinary surgeon, and allow him to make a deep incision and remove the small piece of fibrous tissue; this will allow of complete recovery in about fourteen days.

Legal.

A MANITOBA SUBSCRIBER:—"A number of German settlers in our vicinity some years ago received money from the "Canada Settlers' Loan and Trust Co.," for which they gave a mortgage on homestead, stock and implements. Now they cannot return the money and are willing to throw up everything the Company have any claim upon, take another homestead and make a fresh start, providing they can get clear of the company. Can the company take anything from them upon which they hold no claim? If they can, the men say that they will throw up everything and leave the country; if otherwise, they will stay here. This company has sent a good many settlers from here. Please answer this in next paper if possible, as our neighbors are anxious to know whether they have any more show in this country or not."

We cannot answer the question with certainty without better particulars of the company's claim. Generally speaking, the company would be entitled to have their claim settled out of everything covered by their mortgage, and anything else the settlers may have over and above their exemptions, but they would be entitled only to the amount of their claim. The settlers, too, are entitled to any exemptions they have which are not covered by the mortgage. We would advise the settlers to endeavor to make some arrangement with the company before doing anything else. Employ some one who is capable of seeing that they get their rights in the settlement.

Please answer in your legal column the following question:—"I leased a house and lot to a tenant by the month, who was to pay rent monthly and to pay the taxes. The tenant recently left the premises without paying his rent up to date, and without paying this year's taxes. Also he left the premises very much out of repair, having let his cow run loose for some nights in the garden, thereby badly injuring some of the fruit trees and small fruit shrubs, etc.; and besides, he knocked the cellar door off its hinges and burnt part of the back porch, and left some windows with the glass broken out. What are my rights, and how can I enforce them?"

Your rights are to have your rent, and to have the tenant pay his share of the taxes for the current year, and to have damages from the tenant for the injury done to the garden caused by the cow, if the tenant did not take reasonable precaution to prevent the cow from getting into the garden. And you are entitled to damages for the injury to your house to the extent of what it would cost to put it in a reasonable state of repair, compared with its state of repair at the time of renting it to the tenant. You can only proceed against the tenant now by action for the rent and damages. Any right you had to distrain for the rent is lost by you having allowed the tenant to move his goods away, which he appears to have done openly and deliberately, and not secretly for the purpose of depriving you of your right to distrain. The collector cannot, either, in this case, now distrain for the taxes by following the goods. As before said your remedy is by action, but as you say the tenant is worth nothing, and works for a small salary, we are very strongly of the opinion that the best thing to be done in the case is "do nothing."

A. S. JOHNSON, Willowdale:—"Kindly let me know through your legal column what the law is in Ontario as to hogs running at large. 1. If hogs escape from their owners field and do damage, is the owner liable for the damage? 2. Are hogs allowed to run on the highway?"

An owner of hogs and other animals must take care to see that they do not escape from his property to any other person's property, and he must keep up such fences as will prevent them from trespassing; and no matter whether the animals get into a neighbor's property through the owner's or the neighbor's line fence the rule is the same, and the owner must make good the loss, providing the neighbor's line fence is the lawful fence. The municipalities have power to pass by-laws declaring what sort of fence is a lawful fence, and there is probably such a by-law in your township. 2. As to hogs or other animals running at large upon the highway, the municipalities also have power to pass a by-law to restrain them being allowed to run there, and probably there is a by-law also as to this in your township; but whether there is such a by-law as last mentioned or not, the owner of animals who lets them stray or run upon the highway in Ontario is liable for damage done by such animals straying from the highway upon another's land and doing damage there.

Manitoba Wool.

Editor of the FARMER'S ADVOCATE:

In a recent issue of the ADVOCATE an article referring to Manitoba wool appeared, stating that there was not sufficient "yolk" in the wool. Now, such has not been our experience; in fact, our wool in this country has had more "yolk" than was usual in Ontario. This I attribute to the fact that our sheep have access to large stubble fields, and quite a variety of feed, such as is common to grain farms, also grain in winter. I see no reason why numbers of sheep could not be kept upon our grain farms of Manitoba. During summer, if not convenient to keep them upon the farm, let them have a few months' run on a sheep ranch.

Yours truly, JAS. WELLS, Virden.

Lord Derby's Tribute to Sir John Carling.

Lord Derby, the late Governor-General of Canada, addressing a representative meeting of Lancashire agriculturists at Preston, said that he believed the county councils ought to imitate Canada's policy of establishing experimental farms. He testified to the very great benefits accruing to the Dominion from these farms and the institutes connected with them, instancing the fact of their testing the value of the soils and of recommending the best kinds of manure for improving them. The meeting unanimously passed resolutions in favor of Lord Derby's advice.

Lord Stanley of Preston, the present Earl of Derby, during the five years of his Governor-Generalship of Canada, took a lively interest in the affairs of the Dominion Experimental Farm, and looked carefully into its operations. Lord Derby is well posted in agriculture and looked upon as an authority, and his remarks show his appreciation of the work so successfully developed by the recent Minister of Agriculture. This meed of praise to Sir John Carling is well merited. It can be truly said, we believe, that he did what he could in the interests of the Canadian farmers, and Canada's welfare would be better served by Sir John than the lawyer now occupying the position, whom the Government made a mistake in appointing Minister of Agriculture to meet political exigencies.

Pork Market Again.

To the Editor of the FARMER'S ADVOCATE:

In your issue of Oct. 20th, "Invicta" figures out the hog profits. I think he is very near the mark when he says ten lbs. of pork from a bushel of wheat, and young pigs could not be bought at less than \$2.50 in this district for the past five years; and again, the buyers are not offering 5 cents, but 4 1/2. The pork packers are calling pretty loudly for hogs, and trying to teach us farmers our business; allow us to ask them a question or two. How is it shippers could pay one-half to one cent per pound more than our Manitoba packers, as they were doing last summer, and pay freight to Toronto or Montreal and return, and, I assume, undersell them in their own market? The farmers are not here to make millionaire pork packers; give us a fair market price and we will be satisfied with small profits. Take all that is offered, and there will be no need to shout, more hogs. The Eastern packers are paying as much or more at the present time for live hogs as ours are for dressed.

Yours truly,

"PRACTICAL," Holmfield.

[We are pleased to see so much interest stirred up in this hog question. The above letter has, however, a pugnacious ring as though the packers were trying to starve out the farmers. We do not see that such a course would be in their interests; in fact, neither party can benefit by starving out the other.]

In a former article we expressed a belief that the new pork factory would prove a benefit to the farmers, and as yet see no reason to change that opinion. We certainly have no intention to support the packers against the farmers, but we think they are not against them now; whenever we are shown that they are, none will be readier to raise a protest.

"Invicta's" estimate of ten lbs. of pork from the bushel of wheat is probably nearer the average, but that does not say that we should be satisfied with that when, under better or more favorable circumstances, fifteen lbs. can be made, and men in Prof. Robertson's position have no cause for making false statements. The Professor once made the following pertinent remark:—

"When a man sells hogs whose main occupation has been to squeal, he does not sell skill. There are long-backed, long-necked, long-snouted hogs that live for a year and a-half on a man and then are not willing to die at a profit for his benefit. A man does not, cannot sell skill in such a package, but is trying to sell squeal, which is not marketable through a hog or any other channel the world knows of. Then the least we waste in swine feeding, and less squeal and more skill we can sell must be our objective points."

Local freight rates and "buyer's" profits have to come off the producer, just as with any other product. The factory referred to only began operations this fall, so cannot be said to have been on the market last summer.

As to the latter part of "Practical's" letter, no advantage is gained by exaggeration. We make the following quotations: On Nov. 21st J. Y. Griffin quoted us his prices for that day as \$5.25 per cwt. for live hogs weighed off the cars at the factory, and \$6.50 to \$7.00 for dressed.

The "Globe" of Nov. 18th quotes the Toronto market as follows: Choice hogs are selling to-day at from \$5.15 to \$5.25 per cwt., weighed off cars; a good many deals were made at \$5.00 per cwt.

As the great market for the hog products of Manitoba is British Columbia, and through freight rates from Toronto to the Coast are nearly the same as from Winnipeg to the Coast, therefore our buyers have to be guided largely by Toronto prices. Here again, as at almost every turn, crops up the great question of FREIGHT-RATES.—Editor.]

Poultry on the Farm.

BY MRS. IDA E. TILSON, WEST SALEM, WIS.

An acquaintance of mine says he had plenty of fresh eggs one winter, anyway. Being too ill for other heavier work he tended the hens, giving them fine clover hay and hot boiled potatoes freely. I will add that in a mild winter the potato ration overdone would overfatten.

Following is my present programme, based on my main supplies, though I shall add some extras and treats:—First day—Meal pudding, oyster shells, wheat, barley, chopped raw vegetables. Second day—Vegetables, usually cooked, wheat, buckwheat, gravel, corn on cob. Third day—Meat, cooked, charcoal, oats, shelled corn, clover hay.

Then return to the beginning and repeat. Shells and gravel, the grinders, are put with puddings and vegetables, which need their help. Meat is a digester itself, but being laxative is paired with constipating charcoal, oats and hay. Corn, the most heating and fattening grain, is paired with oats, the least so. One warm, cooked meal is planned for each day, likewise one article slowly eaten furnishing long employment, such as clover, corn on cob and raw vegetables. I lately read of a man who, having neither hay cutter nor fine hay, took an old-fashioned flail to his clover, and thus separated the edible leaves from the useless and cumbersome stems. Clover chaff is relished, scalded as an ingredient of puddings, or dry and clear. I have learned the so-called "germ meal," sold among poultry supplies, is corn, oats, barley and wheat ground together—an admirable combination indeed. I am using the first three ingredients, with which I put shorts, and if bran or ground rye were at hand, should also add some of either or both, because I try to vary puddings like other parts of the diet. Among the sunflowers, an agreeable and valuable feature of my autumn programme, was one American head, ten inches in diameter, and several nearly as large. On comparing notes with other poulterers I often find them feeding a greater quantity, though less variety, but I intend to provide whatever the hens can eat up clean. Whoever expects to get eggs or anything else out of comparatively nothing will, instead, get nothing out of something, since ill-fed hens make no return for even that which they have eaten. In order that my biddies should not inaugurate an "early closing" movement for their laying days, nor the absence of eggs be another kind of autumn leaves, I fed carefully through late summer and the fall, when grass dried and bugs hid. Besides its own appropriate work, each season should see some planning done for the next.

While I write, I am thinking that

"As sure as we're a poet,
We'll be out before we know it,
With a big, long-handled shovel,
Digging ditches in the snow."

Doubtless some Northwestern agriculturists failed to visit Chicago this season, because their wheat did not bring a fair price. But whatever the price, market reports look as though farmers had full crops, and their fowls might have such too. Instead of exporting wheat and importing eggs, thus paying carriage both ways, feed part of the surplus to poultry here. The poultryman is not seeing "hard times;" it was some other man who said "Not only are dollars scarce, but worse yet, half dollars." For several months poultry products have commanded excellent prices, while poultry supplies remain unusually cheap. I cannot even meet the desires of those who come right to the house and tease for eggs.

Certainly the beginner should keep accounts, and no veteran is harmed thereby. Write the number of eggs gathered each day, also dates and amounts of both sales and expenses, and have on record the number of your fowls, with age and description of each; then, once in a while, or perhaps oftener, seriously sit down and "take account of stock," learning whether and what you are making. Our labors must be wisely directed, as well as earnest and abundant. I sometimes wonder how people make up their averages of egg production. One person, giving me his, said that was what his flock would have averaged, had each hen done her duty. I make monthly averages, then add those monthly ones for the year, deducting nothing for setters or mothers, because other hens, not allowed to set, will still take some "time off" for rest and recuperation. If a week after any month begins I sell four hens, they are considered equal to one hen for the whole month, or six sold midway equal to three throughout. The larger the divisor or number of hens, the smaller average our sum total of eggs will yield. I wonder whether some champion averagers divide by the number of fowls left at end of year after reductions through selling and eating, and yet use as dividend a sum total of eggs, including what were laid by those defunct biddies. Burnham's "Poultry Book" calls 140 eggs a piece a year a good average for large flocks. Small flocks do better, because they get in proportion more insects and table-scraps. "Fannie Field" admits that 125 eggs to a hen show good work, but thinks we should aim at 180, which is the maximum.

Poultry well managed will help or entirely support their owner, but cannot do so and carry along a lot of idlers among themselves. Give the best in your flock other beets than "dead beat"

companions. Market or cook the culls, and your remaining birds will profit by increased room. If one enjoys a fine looking flock he will discover how much its appearance is improved by the absence of imperfect specimens. Prices are often best, and, till chickens come again, continue good after the holidays—that season when so many rush in poultry they are apt to glut the market. The recommender of culling should also state that it is wrong to sell a diseased bird. In fact, no sickly fowls should wait around to be sold, because they lead miserable lives, cost time and medicine, and spread disease among their own and human kind. I am sometimes asked whether I ever have sick birds. Yes, but I have learned to get them planted deep in mother earth, where they will produce better crops than when alive. The wife of a purveyor, and later a hotel proprietor, told me they rarely got a lot of hens without some diseased ones, and she had seen so many tumors and unhealthy conditions, she could not relish poultry unless bought of reliable persons.

Keep Only Paying Hens.

When an account is kept with a flock of hens, the mistake often made is in keeping the account of the whole number, instead of individual hens. It is more difficult to keep account of each member separately. The egg in a nest cannot always be credited to the right depositor. The owner cannot stand by the nest in order to learn which of the hens lays the largest number of eggs.

But each hen will soon make known her faults and vices, even if her good qualities cannot be discovered. When she lays an egg she makes a noise about it, and her comb looks bright and red during her busy season. When she is adding nothing to the egg basket, she sings no song, her comb shrivels and becomes pale. She quietly becomes a back number. Each hen indicates when she is a producer. The farmer or poultryman can select the profitable from those that consume food without rendering an equivalent.

Every flock contains a few hens that are superior to the others. The flock, as such, may not pay for its support, yet it may have in it one or two hens that cannot be surpassed as layers. But the few productive hens may have imposed upon them the task of supporting all the idlers; as the eggs gathered are from the whole number of hens, the idlers soon disgust their owners, who send the whole flock to the market as unprofitable.

If the most prolific hens were retained, and the worthless ones marketed, a great improvement would soon result. It is keeping drones that makes expenses large and receipts small. It is a loss of time and money to feed ten hens in order to secure eggs from only five. A small flock of laying hens is more valuable than a large flock that is "expected" to begin laying. Don't depend on uncertainties. The hens that are not laying during those periods of the year when all the conditions for so doing are in their favor will give but little profit when the conditions are against them.

Keeping a flock of hens on the probability that they are "about" to lay is a great risk. The most deceiving hens in that respect are those that are in a very healthy and thrifty condition, but are too fat. On the principle that "food makes eggs," this class of hens are fed liberally, and while their appetites will satisfy the most sanguine owner, the bottom of the egg basket is never covered. Finally, as time flies on, and the season is well advanced, a little reflection points to the fact that such hens cannot now pay for past favors; even should they begin laying, the accounts place them on the wrong side of the balance sheet. And now, when the hens begin to lay, having been highly fed, the moulting stage comes on, and three months more is taken up by the shedding of their old feathers, and the putting on of a new suit—all at their owner's expense.

There is a wide difference in hens. Some will begin laying in the fall, lay on through the winter and during the summer, losing no time until August or September, when they begin to moult. But moulting is fatal to such hens, as they receive no credit for their good works. If they set an example of usefulness they lead their owners to expect them to so continue, and as soon as they fail to keep on, their heads fall under the hatchet for simply resting from their labors, while the fat, drone hens that have been expected to begin are retained another year in hope that they will do better. Virtue does not receive its reward even among hens. Individual merit is swallowed up in the vices of the whole number.

Early pullets are the most uncertain of all. A pullet that does not begin to lay before she is ten months old should be sent to the market stall. It does not pay to keep pullets to replace hens unless the pullets begin to lay in December, and then lay during the winter. When the pullet is slow in beginning to lay, the cost of her maintenance detracts from the profits too greatly. When early pullets (those hatched not later than April) do not begin to lay in November, it is seldom that they will lay until the opening of the spring.

It is much cheaper to keep the old hens during the three months required for the moulting process, than to sell them off and replace them with such early pullets. The old hens will cost less and pay better. No early pullet will pay for herself until she is at least eighteen months old, as she must return the cost from the time she was hatched

until the time she begins laying—a tribute which the hen has already paid.

The males are another set of drones. The time to dispose of them is when they weigh about three pounds each, as they then bring the highest prices. To retain them until they fully mature is to reduce the price and increase the cost. When keeping an account of a flock as a whole, the useful hens are charged with the support of these unprofitable lords of the poultry yards. They yield to them their choicest seats on the roost, and are crowded by them on the poultry house floor and in the yards. Every flock should be reduced to its minimum, containing not a single drone, male or female. Each hen, when possible, should be carefully observed, in order to know which to retain and which to discard. This is the only intelligent way to manage to procure a profit and avoid loss.

By weeding out the unprofitable stock a higher standard will result. In the observation of the individuals much can be learned. The good hens become pets, and pride in their individual excellence results on the part of the owner. The young stock will be hatched only from the best producers, instead of from eggs taken indiscriminately from the egg basket. No farmer who will carefully cull out the drones need depend on breeders to produce breeds for him. Pure breeds should be used, however, especially pure-bred males. Even with the choicest stock the matter of selection should not be overlooked. There are drones and idlers in aristocratic flocks as well as in flocks of low degree. There is room for improvement in every direction. J. J. L.

Mr. Ferguson's Rejoinder.

Heretofore I have always been interested, and often instructed, by what Mr. Pringle had to say upon beekeeping, but I must say that in this little controversy, Mr. Pringle's articles have been more conspicuous for hauteur and proofless assertion than for correct reasoning or sound argument. I think I have given a reason for every statement I have made, which Mr. Pringle does not condescend to do, evidently assuming that his *ipse dixit* should be all sufficient.

In the *ADVOCATE* of November 1st Mr. P. accuses me of perverting his statements in order to make him appear to contradict himself. I would remind Mr. Pringle that in his article, July 15th, he accused me of contradicting myself, and has never yet shown me wherein. He speaks of obtuseness, but there are none so blind as those who will not see. If Mr. Pringle cannot see that he has contradicted himself, perhaps his readers will not be so wilfully blind, and for their sakes and my own I now propose still more plainly to show wherein I consider I was justified in saying that Mr. Pringle contradicted himself. In his first article on this subject, in issue of May 15th, Mr. P. tells "Subscriber" that "it would certainly be a little difficult to get extracted honey from box hives. You might get strained honey in the manner described in a previous issue of the *ADVOCATE*." (Why strained honey and not extracted, since Mr. P. tells "Subscriber" subsequently that he can perform this operation readily?) Mr. P. goes on to say: "You want extracted honey, taken with a honey extractor. This machine can only be used on hives with movable frames. You must, therefore, transfer your bees from the old box hives to movable frame hives before you can use a honey extractor on them." Further on in this same article, in giving directions for transferring, he says: "If you have a honey extractor the honey had better be extracted from the combs before you fasten them in the frames or afterwards, as you may find it easier." The reader will notice that above Mr. Pringle says that "Subscriber" could not get, without difficulty, extracted honey from loose comb, here he advises him to do this very thing; and in his second article, July 15th, he speaks very lightly of this operation (extracting from loose comb), mentioning it incidentally in connection with transferring, as though it were the simplest thing in the world, saying: "I advised the box hive man to let his bees swarm as usual, putting the swarm in the new movable frame hives, and in twenty-one or twenty-two days from the first swarm, when the combs would be entirely free from brood, to transfer comb and bees to the new hives, and by extracting the honey from the combs he would have no difficulty;" and again, "But in twenty-one days after the first swarm, when the combs are entirely free from brood, the honey may be extracted readily. I think the reader will see something like a contradiction here.

As for fools, I would say to Mr. Pringle that the readers of the *ADVOCATE* are quite capable of judging for themselves as to the wisdom or folly of following either his advice or mine. And what I have written will speak for itself.

G. W. FERGUSON.



(PRIZE STORY.)

"Say, girls what is it? What are we to do during holidays? Was that why you were called down?" eagerly questioned Ethel Payne as the girls came upstairs.

"You needn't have been so anxious. It's nothing so very pleasant," drily remarked Maud Morris.

"What is it anyway?" impatiently repeated Ethel.

"Oh! I'll tell you if Maud will not," said Rose. "It's just this, we are not to have our annual party."

"It's just too-mean," interrupted Bessie Morton, "Uncle Fred wanted me to go up to Salem for my holidays, and I begged mamma to let me stay and have some fun. I might as well have gone to the country as to be buried here with you girls."

"Complimentary to us, I must say! We'll allow you to go yet, and hope the society of the old folks will not prove too exciting, after being so long accustomed to the dullness of ours."

"Don't try to be sarcastic, Susie. You know it is provoking to be shut up here, when one might have got out of it."

"But why is it, girls? Why can't we go?" persisted Ethel.

"Well," said Rose, "Miss Moore is unexpectedly called away, and Miss Burt, who is to be left in charge, requests that there be none, as she feels she is too inexperienced to undertake it."

"She'll be experienced before vacation is over, if I know anything about it," chimed in Clara Millar.

"But, Ethel, we haven't told you all yet," resumed Rose. "Miss Burt is truly magnanimous and has devised a plan for our entertainment that should make us all perfectly happy."

"We are to have the privilege of inviting one young lady to spend Christmas Eve with us. We shall have a simple tea, served at an early hour, and such amusements as we choose to provide for our friends."

"She hopes we will all take such an interest in this as will ensure a pleasant evening to ourselves, and be an honor to the school. We are to meet her this evening after the other pupils have gone, to perfect arrangements. There, that's all of it. Is it not a delightful prospect?"

"It is mean," assented Ethel, "but it's no use moping over it. We'll have some fun out of it yet. See if we don't."

"Suppose I'll not be allowed to leave my room this evening, but you quietly listen to her plans and then we shall perfect ours."

"Well, then, let us all ask the same one. Let us all invite Jane/Huston."

"O Ethel!" in dismayed tones, from the girls.

"Now do, it will be fun. Miss Burt will be ready to receive the elite of the town, and won't she be surprised, when the milk-maid is ushered in."

"We wouldn't dare to!" asserted Susie Brook.

"We would, too! What could be said! We would each have invited one, and would be just obeying the injunction to 'Ask the poor, etc., to the feast.'"

"But Miss Moore?"

"Now, girls, I won't listen to one objection. We must just get the whole thing arranged."

"We might do it," began Clara, "if—"

"Of course, we'll do it," said Rose, "if we can carry it out successfully."

"What's to hinder us? We can slip them to her, when she comes with the milk, Wednesday morning. What will she think?"

"She'll come, of course," said Susie.

"Of course she will. Six times over, if she can," added Maud.

"What about souvenirs?" questioned Bessie.

"Oh! we couldn't miss that," said Rose. "She'll wear them all."

"Let's make something gay. I'll tie a red ribbon through a little bell, and ask her to wear it," said Ethel, laughingly.

"I have a lovely set of glass beads a squaw gave me when I was a little girl," said Rose, "and she shall have them."

"And I," said Clara, "shall make her a fancy rosette of various bright colored ribbons."

"I'll get the fanciest pin that can be bought in town for ten cents, and enclose it."

"A ring to match Susie's pin," called out Bessie.

"The gayest of handkerchiefs, perfumed with musk, shall be my offering," declared Maud.

They presented themselves at the college. "That's good! A fine collection!" exclaimed Rose, clapping her hands. "Each attach a little slip of paper saying, 'Please wear my favor.'"

"The programme next," said Susie.

ter for a time, resolved to give them to some young gentlemen of the town to whom she had carried notes on previous occasions.

Having come to this conclusion, she proceeded down town, and distributed them most impartially, giving to the first one on whom she called the note that came first to hand.

The result, as you may surmise, was not all that could be desired. Thus it befell that Mr. Peters, who was engaged to Rose, had to endure the fancied slight of having Mr. Ryde receive the invitation he felt was his by rights, and young Wilton, who was just going down the street to order some



MARY AND ROSE LED.

roses sent up to Clara, felt he could not do less than send them to Maud, when she had been so kind as to remember him.

Mr. Young was much pleased to receive the card of Susie, that young lady in general treating his advances rather coolly, while Mr. Harton could not understand how Miss Bessie, whom he had met but once, should have singled him out for her favor, and Mr. Sanders, who was very young and very bashful, was much astonished and rather alarmed at being favored with the card of the sprightly Ethel.

The gentlemen, too, were rather surprised that invitations that had the sanction of the teacher should not have come by mail, but supposed it must be to ensure their prompt delivery.

However they came, they had them, and so, in due time, presented themselves at the college and sent up their cards to Miss Burt.

Much surprised, she went down to greet them, and by skillful questioning, learned how they had become possessed of their invitations, without letting them suspect that they were not expected, and then exclaiming herself to see if the ladies were ready, she waited on the girls.

One glance at them convinced her they were not expecting the gentlemen, and thinking they could not be more surely punished in any way than by meeting their friends in the style of dress they had chosen to assume, she quietly informed them, that their company had arrived and they must now come down to the drawing-room.

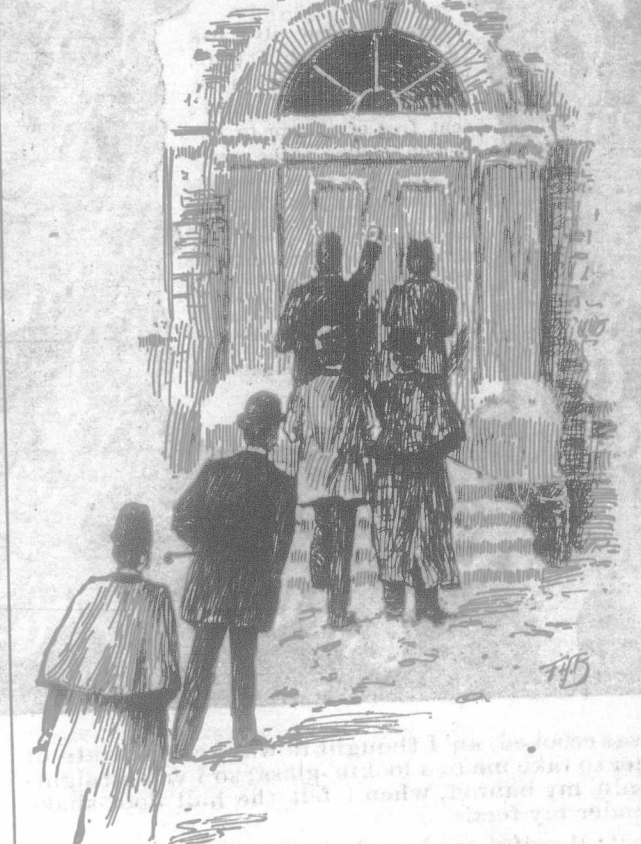
As she stood by the open door for them to pass out, she could scarcely repress a smile at their appearance.

Ethel and Rose led, the former wearing a tweed walking-suit, which was not too long to conceal her white kid slippers, elbow gloves of white silk, loosely drawn over the tight-fitting sleeves of her heavy dress, and a string of pearls above the high close collar.

Rose had an elaborate evening dress of pink silk, which she had borrowed from an elder sister to wear in a tableau, and with it wore a long sash of gold colored silk, and a pair of ordinary two-buttoned black kid gloves.

Maud wore a dainty white dress, that displayed to advantage her gloveless hands and neat-fitting walking boots, while Susie, by her side, was resplendent in a bright red tea-gown and a profusion of jewelry.

Clara wore with her blue wool school-dress a most elaborate lace fichu and head-dress, and Bessie a gay, plaid blouse, over a sky-blue silk skirt.



THEY PRESENTED THEMSELVES AT THE COLLEGE.



SHE THOROUGHLY ENJOYED HER DAILY DRIVE.

"Then she would like us to prepare a short programme of music, recitations, etc., but will not dictate to us regarding any of the arrangements, but leave it entirely to our own judgment and pleasure."

"How very kind!" exclaimed Ethel.

"Now, girls, I've got the brightest idea. Of course, Miss Burt wishes the evening to be a success, that it may be a credit to the school and reflect honor upon herself. But we'll be even with her."

"Here's my plan. We are not required to let her know whom we invite?"

"Oh, no!" from two or three of the girls. "We have perfect freedom of choice."

Unable to regain their composure, the girls would have fled from the room, had they not been detained by the calm, commanding look in Miss Burt's eye.

The gentlemen attempted to talk, and the girls, feeling they had been out-witted, tried to make the best of it, but conversation was strained and spiritless, and all were relieved when the summons to tea caused a diversion.

Owing to Miss Burt's efforts, the hour spent in the dining-hall passed rather pleasantly, and by the time they returned to the drawing-room the girls were ready to forget their dress and enjoy themselves.

An hour or so passed in pleasant, cheerful chat, and then, to their dismay, Miss Burt advanced to the open piano, with the programme in her hand.

Then came the rest of the programme, which was as follows:—
 Reading—"The Night Before Christmas"..... Miss M. Morris
 Trio—"Three Blind Mice"..... Misses C. Millar, B. Norton and E. Payne
 Recitation—"How Doth the Little Busy Bee"..... Miss Susie Brock
 Instrumental Duet—"Jew's Harp and Comb"..... Misses B. Norton and R. Taylor
 Chorus—"Jack and Jill"..... By Class
 The applause of the gentlemen was rather faint. They would doubtless have been more hearty in their expression, were it not for the evident mortification of the girls, who went through each part with a sort of desperation that betokened a total lack of enjoyment.

When the last notes of the closing chorus had died away, Miss Burt arose and said:—

"It is now the hour for us to separate, but before doing so I must thank you for the pleasure of your company, and express the hope, that if anything more than the souvenirs with which the ladies have furnished you is necessary to keep this evening in remembrance, its pleasant memories may be that memento. Wishing you all on the morrow a very 'Happy Christmas,' we will now bid you 'good night.'"

When the 'good-byes' and Christmas greetings had been exchanged, and the girls were left alone with their teacher, Miss Burt turned to them and kindly said, "I wish you, too, could have a Merry Christmas with your dear home friends, but more than that, I wish you could have the 'Happy Christmas' that comes to all who try to act in the spirit of Him who came to bring 'Peace on earth and good-will to men.'"

No other reproof did the girls ever receive. No other was required. The mortification they endured that evening was effectual in preventing them from ever again trying to have fun at another's expense.

MINNIE MAY'S DEPARTMENT.

MY DEAR NIECES:—

The world is full of people who cannot understand why they do not prosper like their neighbors. The real drawback to their prosperity is their own extravagance and heedless expenditure. The young housekeeper furnishes twice as expensively as she can afford and adds hired help, not from inability or incapacity on the part of the wife, but from false ideas of gentility or refinement. Ten years afterwards you will find that pair struggling with a double load of debt and children, and wondering why luck was always against them. Doubtless their true and tried friends do not wonder at all, only at their own duplicity in endorsing for them and involving themselves. Look at life from a common-sense standpoint, my dear nieces, and do not let false notions of refinement lead you into debt, for living on credit is wrong, and we should remember it is not our own, and anything so spurious should be spurned by all right-minded women. Do not think your real friends will value you one whit less because you are economical, and trying to live within your means. Your gown may not be the latest color, make, or texture. What of that? You made it yourself, it is all paid for, and you can feel justly proud of it. Take an honest pride in doing anything you can do well. There is a freedom and strength about our life in country homes which we do not value nor appreciate as we should. So often we hear the expression, "It is not woman's work." Make every allowance for the narrowness of the soul who uttered it, and go on, remembering that any work a woman can do that tends to the good of home, family or nation, is her work, so long as it elevates, educates or does good in any way. Try to work with a spirit of cheerfulness. Duties lie before you which may tax all your energies and capacity to properly perform; perhaps these duties are self-imposed, perhaps they have been forced upon you; take them up cheerfully. It is an empty life that has no such work in it, and there is no savor of godliness in grumbling. Do not get cast down nor discouraged; think of the thousands who would gladly take up such cares as yours, had they the health and strength. Let not failures discourage you; the batch of spoiled bread should only be an incentive to better efforts, and out of failures perfection is sure to come. The cold weather of these winter months will furnish opportunities for many an act of benevolence and self-denial, without which no life is perfect. Give carefully, enquiring into each case before relieving it, and do not give grudgingly, for "the Lord loveth a cheerful giver."

MINNIE MAY.

P. S.—I would call your attention to the photograph holders offered as premiums in this number. They are very handsome, and would ornament any drawing-room.

MINNIE MAY.

Answer to "Subscriber."

Tea Biscuits:—One important point is in having a hot oven, another is, have flour sifted, and roll dough as soft as you can handle; then more baking powder is needed. For each tea cup of flour take a teaspoon of powder; butter the size of an egg is sufficient for a quart of flour. After rubbing butter and powder into the amount of flour needed, turn in cold water, (milk will do) stirring all the time till the right consistency is reached; salt, then roll lightly and bake at once. They will prove flaky, feathery, delicious, and more nutritious than biscuits raised with yeast.

A READER.

Mis' Slocum's Christmas Shopping.

Wal, you needn't tell me nothin' about Christmas shoppin', 'cause I know; I've had experience that 'll last me ter the end of my days,' and Mis' Slocum untied her bonnet strings and fanned her excited face.

"You see, my niece Lucindy, who's been in a store in New York fer the past year, told me I mustn't think of shoppin' to ther 'Corners' any more, she sed I could get things so much cheaper in the city, an' all the latest styles, too; so as I wanted to git some toys fer the children, an' all-wool dress fer Elizabeth Jane, and a necktie fer Hiram, I kinder felt I orter hev ther latest styles, 'cause yer see Hiram's Christmas necktie lasts him nigh onto a year, an' it orter to be well in ther fashion ter begin with—so I concluded to resk the city, and started. Lucindy was agoin' with me but she was busy and couldn't, so she told me where ter go.

"Fust thing I ses when I went in a big store, 'Hev you got any toys?' 'Third section to left, take elevator,' ses he. 'I don't want any section or elevator,' ses I. 'I'm lookin' fer toys—Noah's Ark and doll babies.' 'Third section to left, take elevator,' ses he, laughin', an' walkin' away. I was so mad I started to go right out, when a reel pleasant-faced woman ses to me, 'I'm lookin' fer toys, too,' ses she, 'an' I'll show you ther way.' So she took me into a little room fixed up fancy with lookin'-glasses, an' I see right away my bunnet

fifty,' ses he. 'Wal, you won't git me to buy 'em, ses I, though I did want the red one with yaller stripes, 'cause Hiram likes style; but I warn't goin' to hev them city clerks think they could get the best of me, so I started fer the wool goods. Wal, I jes' hed to sit down an' wait an' wait. I never see sich a crowd. It 'peared to me thet everybody in the hull country was goin' ter hev a new dress fer Christmas. But bimeby I got hold of a brown piece, an' ses I, 'How much is this?' 'That's all wool and a yard wide, ma'am,' ses he. 'That's jes' what I want,' ses I. Will you believe your ears, Marthy Sutton, it was two dollars and a half a yard! 'Wal,' ses I, 'I kin get all-wool goods ter the "Corners" fer fifty cents.' 'Oh, we hev some at that price, ses he, an' he showed it to me. Sich poor lookin' stuff you never see, an' half cotton, so I ses reel plainly, 'I can git a good deal better nor that at our country store, at ther "Corners," an' I turned on my heel an' walked off.

"Jes' then I see some pretty fancy things on a counter, an' I jes' thought I'd take Elizabeth Jane somethin' from New York, so I walked over toward 'em. As I was goin' along, I see a woman comin' toward me. I stepped aside, and the woman stepped to the same side. Then I stepped tother side, so did the woman; an' then we kept bobbin' back'ards ad' for'ards, till I got dreffle riled at her fer not knowin' any better, an' ses I to her, 'Be you crazy?' ses I, 'cause you act somethin' like it.' Jes' then one of them dressed-up chaps took hold of my arm, an' ses he, 'Madam, you be atakin' to yourself in the lookin'-glass.' 'Merciful heavens!' ses I, so I be, an' I was jes' so riled up atther hull business I marched right out of ther store, an' now I'll do my Christmas shoppin' up ter ther 'Corners' from this out, Marthy Sutton, an' if you ever find me agoin' to New York again you kin jes' shut me up in an insane asylum tell I come to my right senses." C. H.

Some Virginia Christmas Recipes.

OLD ENGLISH PLUM PUDDING.

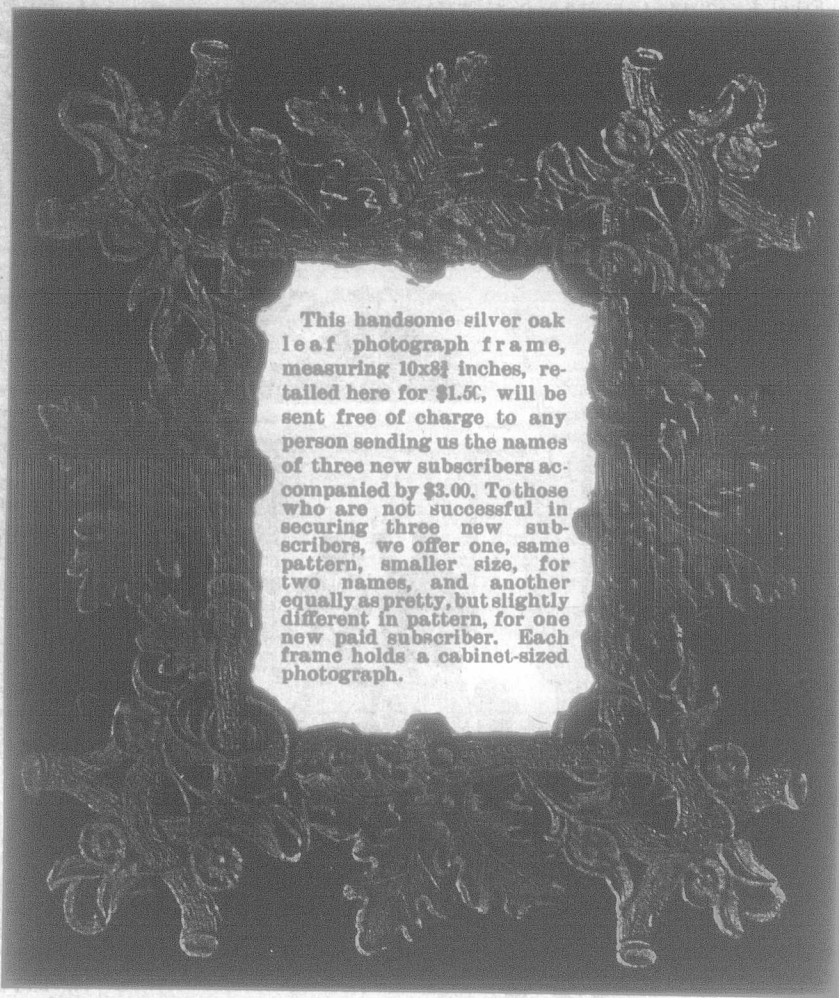
One pound each of grated bread crumbs, suet chopped fine, currants and seeded raisins, half a pound of citron sliced thin, a grated nutmeg, the grated rind of two lemons, a teaspoonful each of ground allspice, mace and cinnamon, two wineglassfuls of wine and one of brandy, ten eggs well beaten. Dip a pudding cloth in hot water, wring it out, flour and butter it, put the pudding on a plate within it, tying the corners together well. Let the pudding boil four hours. Serve with a rich sauce. It is all the better if mixed several days before cooking.

MINCE PIE.

This has ever held a place next in honor to the pudding, and was not the less welcome to Cavalier households because reviled as a "popish dainty" on account of the many fantastic forms—the manger, the Christmas star, etc.—in which skillful house-wives of old England fashioned the pastry. Like its rival, the plum pudding, it gains rather than loses, by being mixed some time before using.

Two pounds of beef, boiled and chopped fine, two pounds of suet, also chopped fine, four pounds of Pippin apples, pared, cored and cut small, two pounds of raisins seeded and chopped fine, the same of currants, (some old recipes use half a pound of dried cherries, with a pound of raisins,) half a pound of citron sliced thin, two grated nutmegs, one ounce of ground cinnamon, half an ounce each of cloves and mace, the juice and grated rind of two oranges, one teaspoonful of salt, one quart of wine and one of brandy, (cider is often used instead of wine,) one wineglassful of rosewater. Our grandmothers were very fond of this delicate, perfumed flavoring.

What can be said new about Christmas? Its delights are many, old and young alike rejoice, but children look forward to that day as theirs, and we go out of our way to give the little folks surprises and pleasure a little beyond the ordinary routine; various devices are resorted to for this purpose, like Christmas trees, Santa Claus, etc., are ever new and ever welcome, and the elders who take part in the frolics seem to enjoy them more than the little folks. Thousands of children all over the land are the recipients of such feasts and festivals, and friends, teachers and parents band together for the purpose of giving them this pleasure, making it the very merriest day of all the year. In the days of old, feasting was indulged in to a brutal extent, as the accounts of the boars' heads, huge barons of beef, saddles of mutton and haunches of venison will testify, all washed down by copious draughts of wine, beer and something stronger. While our celebration of this day is quite as hearty, it is not so coarse, and we have reason to be thankful that every such relic of barbarism is fast disappearing from our life and mode of living. Games of a boisterous nature ended the day long ago, but even now a romping game in which all join is usually the wind up of the day, and sends the little people to bed tired and happy. Surely there must be something more than ordinary about Christmas. We are bound to get better and brighter, whether we will or not,



This handsome silver oak leaf photograph frame, measuring 10x8 inches, retailed here for \$1.50, will be sent free of charge to any person sending us the names of three new subscribers accompanied by \$3.00. To those who are not successful in securing three new subscribers, we offer one, same pattern, smaller size, for two names, and another equally as pretty, but slightly different in pattern, for one new paid subscriber. Each frame holds a cabinet-sized photograph.

was crooked, an' I thought it was reel delicate of her to take me to a lookin'-glass; so I was straightenin' my bunnet, when I felt the hull floor shake under my feet.

"'Merciful goodness!' ses I, 'it's an earthquakel! Let me out.' An' I run ter the door. A man stopped me, an' ses he, 'You can't git out till you git to the second floor.'

"'Second floor!' ses I; 'there won't be no floor in this buildin' in a minit.' Then ther woman took hold of me, an' ses she, 'There ain't no danger, we'll go out now,' an' so we did, an' she showed me the toy counter. But land sakes, the women were six deep around thet counter, an' I waited an' waited, an' I couldn't get near enough ter see a thing, so I thought to myself, there wasn't much new styles about toys, anyway, 'cause Noah's Ark was jes' ther same now as it was when I was little, an' I could buy a reel good one at the 'Corners,' so I started fer a necktie. 'First floor, middle section,' ses a chipper-lookin' chap, who didn't seem ter hev nothin' ter do but twirl his mustache. He tried ter git me in the little room where the lookin'-glasses were. 'No, thank you,' ses I, 'yer don't git me in there agin. Ain't yer got no stairs to go down like other folks hes?' 'Oh yes,' ses he, smilin' very pleasant, an' he showed 'em to me. You better believe, Marthy Sutton, I walked down them stairs feelin' mighty safe and comfortable. After waitin' a considerable spell at ther necktie counter, I got near enough to make a feller hear me, an' ses I, 'want a necktie fer Hiram, one of your latest styles,' ses I. 'Here they be,' ses the clerk, 'fifty cents apiece.' 'Fifty cents!' ses I, sharp as a needle, 'cause I knew he was cheatin' me. 'Why, I never pay but twenty-five at ther 'Corners.' 'We don't keep nothin' lower than

THE QUIET HOUR.

Christ is King.

Shadows were deepening o'er Bethlehem's walls,
The sun had sunk to rest,
And the light, which had touched the towering hills,
Died in the distant west.

Crimson clouds with their edges bright,
Laughed at the heralds of coming night;
Though beast and bird with timid fear,
Shrank from the shadows dark and drear.

Deeper and deeper the darkness fell,
On to the earth with its sombre pall,
Till the boasting clouds took a paler light,
And mourned at the presence of coming night.

But yonder, over the eastern hill,
A new light dawned—see it flash and thrill,
'Tis a star, and the shepherds in it see
The birth of a glorious victory.

And hark! the air so silent now,
Is filled with voices soft and low;
Louder and louder the strains do swell,
Till they burst into song o'er Israel.

And the star still rises, its tender light
Gleams like a meteor, pure and white,
Over the mountain, over the wall,
Into the stable, the sheltering stall.

There, 'mid the sound of angels' song,
The Christ, the blessed Child was born,
And herald angels chant the joy
Which had come to earth in the holy year.

Away to the north, the south, the west,
Spread the joyous news of the great behest,
Till the whole earth rings with the new-born song,
That chains are broken of sin and wrong.

For this the wreaths are now entwined,
For this the temples are sweet with pine,
For this the flowers, pure as snow,
Keep fresh the scenes of long ago.

The unseemly bells, that rang that night,
Were moved by spirits pure and bright;
And listen! the air is full of the chime,
Just as was rung in the olden time.

Then ring out the bells, again and again,
Ring them louder still o'er hill and plain,
Till their brazen tongues tell the story old,
That Christ is King of the whole wide world.

C. Mulligan.

What He Came For.

In displaying some beautiful piece of statuary it is usual to hang it around with dark, contrasting colors, to bring out the perfection of its white beauty. So, in order to realize most clearly the one grand motive of the Son of God in coming to earth, it would be well for you to contrast it in your minds with the things He says He did not come for.

He did not come "to be ministered unto," though well he might; since we were his lawful subjects, He might have come to receive our homage, but He did not.

He did not come "to judge the world"; one day He is to judge the quick and the dead, but that was not what brought Him to this world.

He did not come "to destroy the Law and the Prophets," though some readers seem to think that the New Testament has superseded the Old.

What, then, brought our Lord down to earth? Why did He empty Himself of His glory and submit to the humiliation of a bitter death? It was for one grand reason alone—"to seek and to save the lost." All other reasons seem poor and dark in comparison with this glorious purpose, to die for our sins, to suffer in our stead, to ransom our souls, to save us from eternal death.

The Christ Child.

It was in the Babe of Bethlehem that God's character shone forth, that men might not merely fear Him, but trust in Him and love Him, as one who could "be touched with the feeling of their infirmities." It was on Christmas day that God appeared among men as a child upon a mother's bosom. And why? Surely for this reason, among a thousand more, that He might teach men to feel for and with Him, and to be sure that He felt for them and with them. He took the shape of a little child to draw out all their love and tenderness. He took our human nature upon Him, not merely the nature of a great man, but all human nature, from the nature of the babe to the nature of the full-grown and full-souled man, fighting with all His powers against the evil of the world. All this is His, and He is all; that no human being, from the strongest to the weakest, from the eldest to the youngest, but may be able to say: "What I am, Christ has been." To the strong, He can be strongest, and to the weak, weakest of all. With the mighty, He can be the King of kings; and yet with the poor, He can wander, not having where to lay His head. Rev. Charles Kingsley.

"No Room."

"There was no room for them in the inn."—St. Luke II., 7.
"No room," within the dwelling, for Him whose love excelling
Towards those who never sought Him, to earth from heaven
brought Him,
Who counted not the cost to seek the lost.
"No room," so to the manger they bore the Kingly stranger,
But angel hosts attended, and angel voices blended,
Whilst on His mother's breast he lay at rest.
"No room," O Babe so tender, to Thee our hearts we render,
Not meet for Thy possessing, yet make them, by Thy blessing,
A home wherein to dwell, EMMANUEL!

UNCLE TOM'S DEPARTMENT.

Short Stories Told After Dinner.

I remember the case of a man on shipboard, coming from California in gold times, when there was not half room enough for the passengers. After they had been out four or five days, a man who had not been seen before on deck appeared, and his friend said: "Why, I did not know you were on board! How did you get a state-room?" "Oh!" he says, "I have none, and I will have to sit up all night the rest of the voyage. So far I have been sleeping on top of a sick man, but he has got well and won't stand it any longer."

There was a man in the militia company who was from Nantucket. He was always talking about being from Nantucket—appeared to plume himself particularly on being from Nantucket. That man was not exactly lazy, but he came into the world born tired. He never knew his right hand from his left at drill, and never by any accident succeeded in facing the right way at command. One day the captain, whose patience was nearly exhausted, had his men called off by fours and gave the command, "Right face." This man sprang out about three feet from the ranks, tried to face two ways at one time, and then looked at his commanding officer with a dazed and bewildered air, and said, "Captain, where ought I to be now?" "Back in Nantucket, you idiot," said the captain.

A certain minister's sermons were a patchwork from numerous authors to whom he gave no credit. On one occasion there was a half-intoxicated wag in the audience who had read pretty much everything, and he announced the authors as the minister went on. The clergyman gave an extract without any credit to the author, and the man in the audience cried out, "That's Jeremy Taylor." The speaker went on and gave an extract from another author without credit for it, and the man in the audience said: "That's John Wesley." The minister gave an extract from another author without credit for it, and the man in the audience said: "That's George Whitefield." When the minister completely lost his patience and excitedly cried out, "Shut up, you old fool!" the man in the audience replied: "That is your own."

Some years ago, when sleeping-car bedding was not supposed to be as fat as it ought to be, and the pillows were accused of being constructed upon the homeopathic principle, a New Englander got on a car one night. Now it is a remarkable fact that a Yankee never goes to sleep in one of these cars. He lies awake all night, thinking how he can improve upon every device and patent in sight. He poked his head out of the upper berth at midnight, hailed the porter and said, confidentially, "Say, have you got a corkscrew about you?" "We don't," low no drinkin' sperits aboard dese yer cars, sah," was the reply.

"Tain't that," said the Yankee, "but I want to get hold of one of your pillows that has worked its way into my ear." The pillows have since been enlarged.

An Ode to Canada.

Awake my country, the hour is great with change:
Under this gloom which yet obscures the land,
From ice-blue strait and stern Laurentian range
To where giant peaks our western bounds command,
A deep voice stirs, vibrating in men's ears
As if their own hearts throbbed that thunder forth,
A sound wherein who hearkens wisely hears
The voice of the desire of this strong North—
This North whose heart of fire
Yet knows not its desire
Clearly, but dreams, and murmurs in the dream.
The hour of dreams is done. Lo, on the hills the gleam!

Awake, my country, the hour of dream is done!
Doubt not, nor dread the greatness of thy fate.
Tho' faint souls fear the keen, confronting sun,
And faint would bid the morn of splendor wait;
Tho' dreamers, rapt in starry visions, cry,
"Lo, yon thy future, yon thy faith, thy fame:"
And stretch vain hands to stars, thy fame is nigh,
Here in Canadian heart, and home, and name;
This name which yet shall glow
Till all the nations know
Us for a patriot people, heart and hand,
Loyal to our native earth,—our own Canadian land!

O strong hearts, guarding the birthright of our glory,
Worth your best blood this heritage that you guard!
Those mighty streams resplendent with our story,
These iron coasts by rage of seas unjarred,
What fields of peace these bulwarks will secure!
What vales of plenty those calm floods supply!
Shall not our love this rough, sweet land make sure,
Her bounds preserve inviolate, thou h we die?
O strong hearts of the North,
Let flame your loyalty forth,
And put the craven and base to an open shame,
Till earth shall know the Child of Nations by her name!
Chas. G. D. Roberts.

Compiled Bits of Household Fact and Fancy.

At Christmas be merry and thankful withal
And feast thy poor neighbors, the great with the small.
—Thomas Tusser.
If the sun shines through the apple tree on
Christmas day, there will be an abundant crop the
following year.
Christmas is the only holiday of the year that
brings the whole human family into common
communion.—Dickens.
'Tis the season for kindling the fire of hospitality
in the hall, the genial flame of charity in the heart.
—Washington Irving.
Christmas is the time in which the memory of
every remedial sorrow, wrong and trouble in the
world around us should be active within us.
—Dickens.

Puzzles.

1—CHARADE.

December the month of skating,
Has come FIRST its keen, cold clime,
And I say not at all overrating,
That there is no better time.

For Christmas with its large turkey so grand,
And its great rich pudding so fine,
Is what are greeted in all parts of the land,
Yet it is December all the time.

And what boy could be happy if he lacked his fun,
LAST on the surface of the hard, cold ice,
Where COMPLETE your skates you cannot run,
Yet there is nothing half so nice.
THOS. W. BANKS.

2—CHARADE.

As through the city great I roved,
And gazed on the COMPLETE,
I saw a tiny little child
A-crying in the street.
"Why weep you so?" I quickly said,
"Why is your heart so sore?"
"I weep," he answered, just because
"I have neither a ONE, TWO, THREE, FOUR."
ADA ARMAND.

3—CHARADE.

A stately owl sat ONE a tree,
And truly TWO owl most solemn was he,
FOUR at him gazed intent to see
If to more he'd ever try.
"THREE is most strange," FOUR then did say,
"To see him sit the livelong day,
Nor move a wing, nor leg, nor—nay
Not even blink his eye."
Then up stole FOUR FIVE mischief bent,
And gently caught him by the feet;
Just then he flew and parting said,
"Your brain is in a state of COMPLETE."
ADA ARMAND.

4—ANAGRAM.

Once on a time a begger I met,
Who this to me did say:
"If you would do me a kindness, please,
Just give me a cup of RICH TAY."
ADA ARMAND.

5—ANAGRAM.

Oh! whenever we go up to Guelph,
Out to Morden we shall go,
To see our cousin George,
A Blyth young man you know.
Now, when this fine young gentleman,
To Toronto he doth come,
He's going to call and see his friend,
Oh, my! what a good time we will spend.

Miss Smithson tells us of cargoes,
And our attention she does call
To Halloween, that festive night,
When bad boys do things—well, hardly right.

Now, Tommy Banks, great credit he has won,
As all true selves will gladly own;
And let us all on Thanksgiving day,
Thank Uncle Tom for his picture gallery.

My namesake Harry, surnamed Bobler,
Calls George Blyth second mate;
His puzzles are good, so now, Harry, please,
Send in more puzzles before it is too late.

As for "King" F. B., his duties he is neglecting,
A month he has passed since from him we heard;
Oh! what can be the matter,
Surely it cannot be anything like a mustard plaster.
HENRY REEVE.

6—DECAPITATION.

I come with the happy New Year,
I come with Christmas too:
I hope I will be welcome here
In the ADVOCATE canoe.
T. W. Banks has lately joined,
And great was his reception,
But to get a welcome as 'Two was
Is above all my conception.
My puzzle ONE time will not be long,
But if I'm welcomed here,
You'll get some puzzles twice this length,
Yet still I have a fear,
Because this THREE my first you know
You might say things not pleasant;
Perhaps even now you are tired of me,
So this is all for the present.
MORLEY SMITHSON.

7—SQUARE WORD.

My FIRST is a figure in drawing books taught,
My SECOND an ancient who often had thought
Of soaring to Heaven on waxen wings,
And beholding the glory of higher things,
Who made the attempt, but alas! fell down,
Found death as his guerdon and not renown.
Of things which are rare my THIRD is the best;
To make or to shape my FOURTH does suggest;
My FIFTH is e'er shed o'er a brave soldier's name
In telling his victories, his passports to fame;
My SIXTH and my last we should try to secure,
If we would our success and our welfare ensure.
ADA SMITHSON.

Answers to November 15th Puzzles.

1—Own, now, won. 2—Call all. 3—NOBLE
4—Thanksgiving Day. 5—Halloween. OGLER
6—Cargo. 7—Uncle Tom's Picture Gallery. BLAER
8—Pakenham. 9—George Blyth. LEAVE
ERRER

Names of Those Who Have Sent Correct Answers to November 15th Puzzles.

Geo. W. Blyth, Addison Snider, Oliver Snider, Henry Reeve,
I. Irvine Devitt, Joshua Umbach, A. R. Borrowman, Josie
Sheehan, Morley Smithson, Ada Smithson, Thos. W. Banks.

Why Some People are Poor.

Silver spoons are used to scrape kettles. Coffee
tea, pepper, and spices are left to stand open and
lose their strength. Potatoes in the cellar grow,
and the sprouts are not removed until the potatoes
are worthless. Brooms are never hung up and are
soon spoiled. Nice handled knives are put into hot
water. The flour is sifted in a wasteful manner,
and the bread pan is left with the dough sticking
to it. Clothes are left on the line to whip to pieces
in the wind. Tubs and barrels are left in the sun
to dry and fall apart. Dried fruits are not taken
care of in season and become wormy. Pork spoils
for want of salt, and beef because the brine wants
scalding. Bits of vegetables and cold puddings are
thrown away, when they might be warmed
steamed, and served as good as new.



ONE OF THOUSANDS OF TESTIMONIALS RECEIVED
PORTAGE LA PRAIRIE, MAN.
I use no other Soap but Royal Crown and like it very much. I also use your Royal Washing Powder, and find the two a great help in washing and general house work.
Yours, etc., MRS. WALTER WOOD.
58-y-m

FARMERS OF CANADA

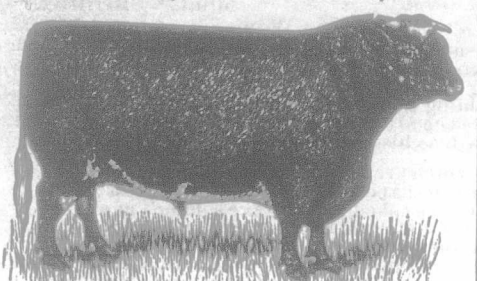
We can save you money! How? Well, we are a wholesale firm, selling direct to the farmers. We buy only from the manufacturers, and we sell only to consumers. We will sell our goods at wholesale prices to any farmer, or any other person who has the spot cash. Our buyers do their work well, and under our rigid spot cash system we are, so far as our profits are concerned, easily satisfied. We would ask you to write to us for our Fall Catalogue or Shoppers' Guide, a book of sixty-four pages, profusely illustrated, and which we will mail free to all who send us their name and address. The farmers of Manitoba and N. W. T. especially will find our prices so low, compared with their local prices, that they will scarcely believe them true.

We sell everything, or nearly everything, that farmers use, so do not hesitate to get our Shoppers' Guide. Here are a few of our prices: One dozen one-inch line or harness snaps, only 15c.; horse collars, \$1.50 each; lightning hay knives, 75c. each; a complete chopper's kit, including a cross-cut saw, axe, and everything required, for only \$5; a first-class gun for \$12.50; rubber coats, \$2; oiled canvas coats, \$2.50; fur coats, from \$15 upwards; fur caps, only \$1.50; farmers' winter choring mitts, only 50c. per pair.

Write for our Catalogue and know just how very cheap you can buy our merchandise.

STANLEY MILLS & CO.,
WHOLESALE MERCHANTS,
Hamilton, 336-y-om Ont.

IMPORTANT SALE OF
Scotch Shorthorn Cattle
COTSWOLD AND OXFORD-DOWN SHEEP.



W. B. Cockburn, Aberfoyle, Ontario (Wellington County, Seven Miles from Guelph), will sell on Wednesday, January 10th, 1894. His entire herd without reserve. The best lot of cattle ever offered in Wellington, including the Chicago sweepstakes bull calf Indian Warrior (13106), also Greenhouse Chief 14723, the 1892 champion, and British Chief (11243), the greatest bull Indian Chief (11108) ever sired. Also several Indian Chief heifers, representing such families as Nonpareils, Wimples, Daisies, etc., and other good families as Missies, Village Blossoms, Verbenas, etc., numbering in all twenty-six head. The cattle are all Scotch-bred, and in nice breeding condition. The sheep consist of twenty-two Cotswold ewes and one imported ram (a Royal winner); thirty high-grade Oxford-Down Ewe Lambs. Wait for this sale, as it embraces animals of rare show-yard quality. Catalogues on application.
TERMS: Ten months credit on approved notes, or discounted at the rate of seven per cent. per annum for cash.

The farm is two miles from Corwin Station, on the branch of the C. P. R., between Guelph and the main line. Parties coming from Toronto or London on C. P. R. must change cars at Guelph Junction, and parties coming from Guelph will find good connections from the G. T. R. to the C. P. R. Trains not connecting will be met. Teams will meet all trains at Corwin.
317-j-om THOMAS INGRAM, Auctioneer.

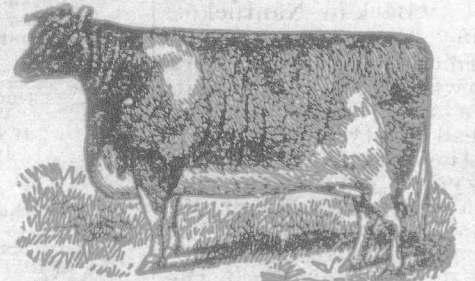
Spavins, Ringbones, etc. Cured by Dick's Blister.
Dick & Co., P. O. Box 482, Montreal.

Important Auction Sale

In February (date to be given in next issue) when we will sell our herd of Shorthorns, comprising sixty head, among which are twenty superior young bulls.
JAMES GARDHOUSE & SONS,
348-a-om Highfield, Ont.
RESTRONGUET STOCK FARM



FOR SALE—4 Shorthorn Bulls, including 2-year-old Warrior 2nd, sired by Imp. Warrior. We are also booking Yorkshire Pigs for spring delivery at \$5 each. Our Yorkshires took sweepstakes at Pilot Mound, Crystal City and Cartwright fall fairs, beating, at the two former places, the two sows and hog that took first at Winnipeg Industrial last July. Terms to suit purchasers. **JOSEPH LAWRENCE & SONS,** Clearwater, Man. 59-m



PIONEER HERD OF SHORTHORNS
WALTER LYNCH, Prop., Westbourne, Man.
Fifteen first and one second herd prizes in sixteen years. A choice lot of young bulls for sale. 46-2-y-m

MAPLE GROVE FARM
ROSSER, MAN.
WALTER JAMES & SONS,
— BREEDERS OF —
Shorthorn - Cattle,
(Bates and Cruickshanks),
LARGE IMPROVED
YORKSHIRE
PIGS.



Maple Grove Stock Farm,
EMERSON, MAN.
Richly bred Holstein-Friesians, headed by Posna 3rd's Clothild, the diploma bull at Winnipeg Industrial. I have a few young bulls, of the finest quality, for sale, and will quote attractive prices on them for the next 60 days. They are sired by my Clothild bull and Temple's Captain Columbus, and out of my best cows. There is nothing better in this or any other country. For full particulars, address
W. J. YOUNG, Prop.
44-y-m

R. J. PHIN,
SHORTHORN BREEDER
A few choice young Bulls for sale.
MOOSMIN, 64-2-y-m ASSINIBOIA

JAMES BRAY,
Oak Grove Farm, Portage La Prairie, Manitoba. My place not being well adapted for sheep, I will sell my whole flock of registered Oxford-Downs including a few choice Ram Lambs. On very choice Boar (Improved Yorkshire) from imp sow and boar, Gladiator (13). A few high-bred Jersey Bulls and Heifers at reasonable prices. Correspondence solicited. 50-2-y-m

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MANITOU,
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BREEDER OF
Clydesdale Horses,
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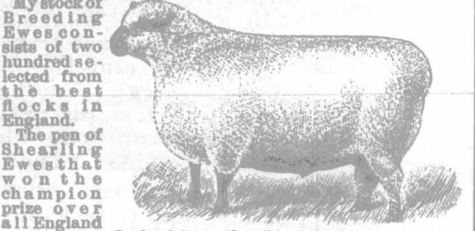
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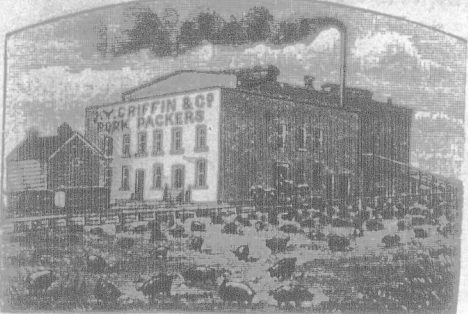
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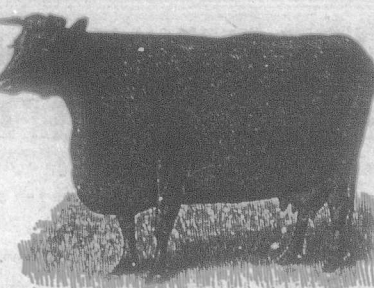
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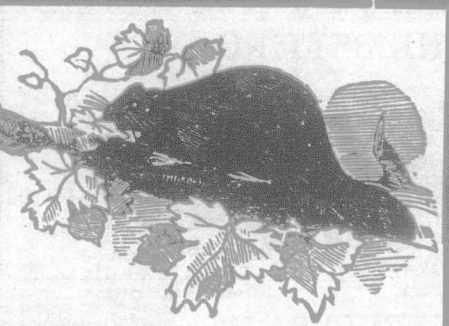
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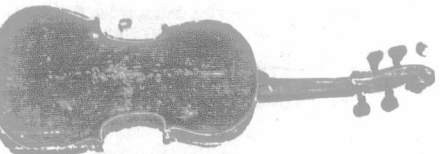
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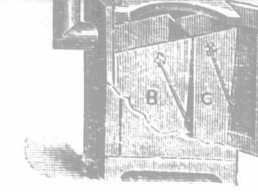
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NORTHERN PACIFIC R.R.

TIME TABLE—Taking effect Monday, Nov. 20, 1893.

Table with columns: READ UP, NORTH BOUND, STATIONS, SOUTH BOUND, READ DOWN. Lists stations from Winnipeg to Chicago with freight and passenger rates.

MORRIS-BRANDON BRANCH.

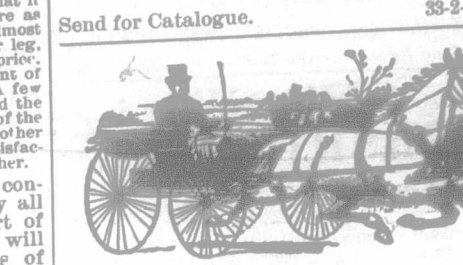
Table with columns: READ UP, EAST BOUND, STATIONS, WEST BOUND, READ DOWN. Lists stations from Winnipeg to Brandon with freight and passenger rates.

PORTAGE LA PRAIRIE BRANCH.

Table with columns: READ UP, EAST BOUND, STATIONS, WEST BOUND, READ DOWN. Lists stations from Winnipeg to Portage la Prairie with freight and passenger rates.

Stations marked * have no agent. Freight must be prepaid. Numbers 107 and 108 have through Pullman vestibuled Drawing Room Sleeping Cars between Winnipeg and St. Paul and Minneapolis.

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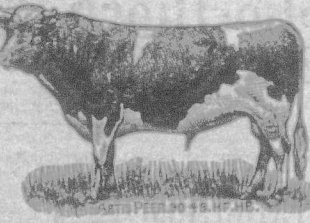
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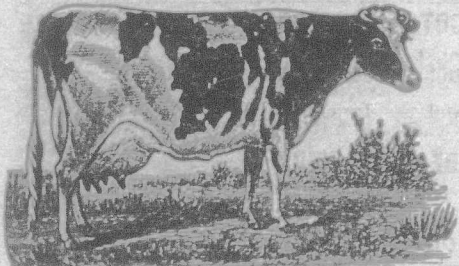
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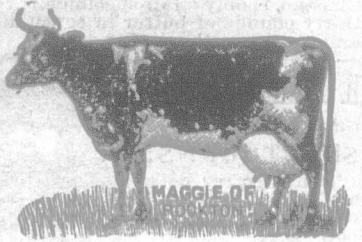


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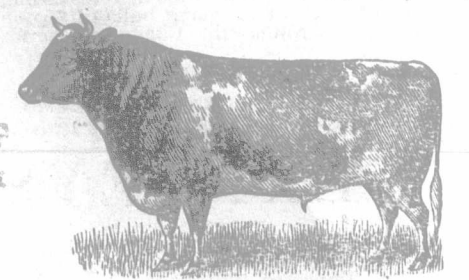
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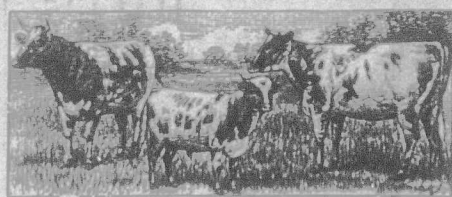
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My stock was selected by myself, and consists of Shearling Ewes and Ewe Lambs from the leading flocks of England, and of the highest quality and breeding. Stock of all ages for sale.



O. W. GURNEY, Paris, - Ontario. 327-y-om

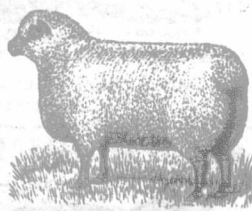
SHROPSHIRE!

Having reduced my flock by recent sales, I have just returned from England with a fresh importation of a very choice lot of shearling ewes, all bred in England to a ram half brother of the ram that Mr. Bowen-Jones sold to Mr. Thomas for \$1,000. I can now offer for sale over 100 imported shearling ewes as good as any I ever imported. W. S. HAWKSHAW, Glanworth P.O., Ont., 7 miles south of London. 326-y-om



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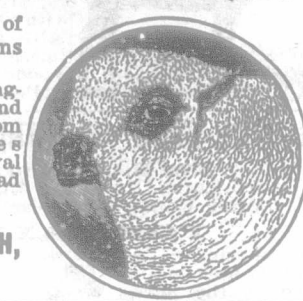
My whole flock of 60 head of imported Rams and Ewes, a few home-bred Shearling Rams, and a choice lot of lambs of both sexes. Also a choice lot of young Yorkshire Pigs. T. H. MEDCRAFT, Sparta, Ont. 343-y-om



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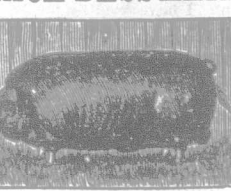
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STOCK GOSSIP.

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

Mr. O. R. Decker, Chesterfield, Ont., has a change of advertisement in this issue offering choice young Berkshire boars and sows in farrow, mostly from imported boar.

J. D. Stewart, Russeldale, Perth County, Ont., in this issue offers several A. J. C. U. Jerseys for sale. Read his advertisement. Write him for prices if you want anything in this line.

Mr. John Isaac, Markham, who has imported such a number of Shorthorns from the Kinellar herd during the past fifteen years, places an ad. in another column. See what he has for sale and write him for prices.

In this issue R. Reid & Co., of Hintonburg, Ont., offer for sale their entire herd of Ayrshires. The owners write us they are deep milkers, and have won many prizes at Canadian shows. Ayrshires are in demand to-day. Canadian farmers who wish to buy should correspond with Messrs. Reid & Co.

Mr. Sydney Fisher, Knowlton, P. Q., reports sales of his Guernseys: Yearling bull, Vampire, No. 333, Am. G. C. C. Register, to Circle Agricole of St. Raymond, also Vanessa, his largest milker, a fine cow bought some years ago from Hon. John Abbott's herd. This cow is said to bear an exceedingly good record.

In another column will be found the advertisement of Joseph Lawrence, Clearwater, Man. It will be noticed he is offering for sale his stock bull Warrior - 1870's. This bull he assures us is a capital stock getter, is kind and gentle, and is a prize-winner. He only parts with him to prevent too close breeding.

Mr. T. Speirs, the well-known Shorthorn and Berkshire herder, of Bradwardine, has bought the farm of Mr. Lemieux, of Oak Lake, which district can now boast of having three herds of Shorthorns almost adjoining each other, namely, R. L. Lang, W. H. Holliswell and Mr. Speirs, and with such a trio the district should make itself felt as the Shorthorn centre of the West.

NOTICES.

EXCURSIONS TO CALIFORNIA. On account of the San Francisco Mid-Winter Fair, the Chicago, Milwaukee & St. Paul Railway Company will sell excursion tickets to San Francisco, St. Jose, Colton, Los Angeles and San Diego, Cal., and Portland, Ore., at reduced rates, good until April 1, 1894. For full particulars call on any coupon ticket agent or address A. J. Taylor, Canadian Pass, Agent, 87 York St., Toronto, Ont.

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Dear Sirs: - Have used several packages of your celebrated Condition Powders with unexpected results, my horses having been working on the canal all winter, and become run down. Until within the last month I have had them in town, and used your Powders, which have brought them to a first-class state of health, and I consider them to be worth their full value now.

Yours truly, JAS. MAYBURY, Master Carter.

The Northern Pacific Railroad has put into effect a series of low round-trip rates to Pacific coast points. These California tickets are good until April 30th, 1894, and are good for stopover under certain conditions.

These rates will enable those desiring to do so to spend the winter in Southern California, or to visit the midwinter fair to be held at San Francisco. This latter event will undoubtedly be second only to the World's Fair just closed, and will repay a visit, as it will exhibit the resources and capabilities of California.

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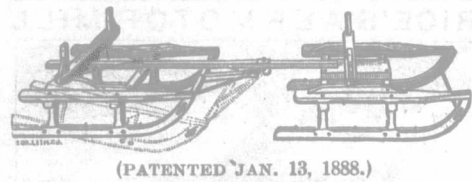
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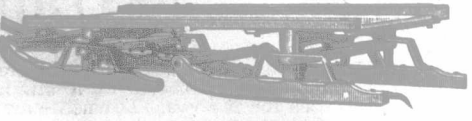
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