

also, apparently healthy animals show a reaction, but when a very thorough and careful autopsy is made evidence of the disease is usually found. In a case of an apparently healthy animal, therefore, one can only say in safety that the examination had not been sufficiently close to discover the lesions. Again, in the cases where there was apparently some other disease and the tuberculin injection caused a reaction, a careful autopsy has shown the presence of tuberculosis and that the reaction was due to the latter disease. This disposes of the objection that the tuberculin reaction is not characteristic.

"The statement that the tuberculin injection causes the disease to spread more rapidly is not warranted by facts, and in many instances the use of tuberculin has apparently caused an improvement in the disease.

"One animal, originally tuberculous, kept at the station of the Bureau of Animal Industry, has received about 3,000 c. c. tuberculin in different injections, extending over a long time. This animal is now well and fat and has entirely recovered from tuberculosis.

"In 1895 the International Congress for Veterinary Medicine at Berne said: 'Tuberculin is a most excellent diagnostic material, and can be of the utmost service in the warfare against tuberculosis.' This resolution was endorsed by the French Academy of Medicine and the use of tuberculin was generally recommended. The satisfactory reports received from the different States to which the Bureau has sent tuberculin are confirmatory of the results obtained and prove that tuberculin is the only effective means at hand to insure a rapid eradication of tuberculosis in cattle. A table showing the results of the tuberculin injection of more than 50,000 cattle will appear in the next annual report of the Bureau."

MARKETS.

Toronto Cattle Market Prospectively Viewed.

(BY AN OCCASIONAL CORRESPONDENT.)

At this time the question of international reciprocity with regard to the new tariff programme and the abolition of quarantine is exciting more than ordinary interest in the cattle export business, there being a large increase in the number of cattle and sheep raised in the Province of Ontario over previous years. We have, according to statistics, the following number of cattle, sheep, and hogs: 2,150,103 cattle, 2,022,735 sheep, 1,299,012 hogs, being an increase since the year 1892 of 125,000 cattle. Yet the value has not increased in a like proportion, for in the year 1892, 2,022,130 cattle were valued at \$45,548,475, and in the year 1895-6, 2,150,103 were valued at \$47,708,017. The lowest price on record for the year was 1 1/2c. per pound, and the highest was 4 1/2c., so that the margin was great; the supply is clearly in excess of the demand. This latter is to a very material extent caused by the growing competition which now prevails among stock-raising countries, while the embargo against Canadian cattle adds a very great barrier to our being able to rid of our surplus in the Old Country. Notwithstanding the plentiful supply of cattle, our hog products continue in good shape. For the year 1895 we had on hand 1,299,072 hogs, valued at \$7,101,211. There was sold and slaughtered 1,059,932, valued at \$10,067,667. Our swine flesh and hog products continue to receive increasing favor in Great Britain, and a larger demand. Our packers are increasing their shipments yearly, even under these adverse circumstances. Canadian meats and products are making headway abroad. The imports of our bacon into Great Britain during the last ten months amounted to 372,232 cwt. against 219,503 cwt. for the corresponding period last year, 112 lbs. to the cwt. This is an increase of 159,729 cwt. for the year 1896. The American bacon sells at less than the Canadian article. If the Government will foster this industry our bacon will soon enjoy as enviable a reputation as Canadian cheese in the Old Country. While on this subject I would like to point out the desirability of a system of inspection at the packing establishments under Government authority. I believe it would be in the interests of packers themselves to have such an officer appointed, in view of the action of Germany and France regarding foreign pork products. I see that Manitoba now has (in Winnipeg) a large establishment where much of the ham and bacon consumed in the Province is packed instead of being imported. The export trade in sheep has prospered better than any other branch, although the quantity has not increased, for we have less this year than for two seasons, but a new market at Buffalo has taken a large quantity of our surplus. We had on hand the 1st of July, 1895, 2,022,735, valued at \$7,708,442, and sold 682,315, valued at \$2,484,612; whilst in the year 1896 we had 1,935,933, valued at \$9,016,118, and sold 616,237, realizing \$2,784,288; so that we sold less quantity and realized more money. The average price on the market was 4c. per lb.

Toronto Markets.

Business has this week again been extremely quiet. It is to be hoped that we shall see great improvement in the cattle trade when once the new year is fairly under way.

Total receipts for week ending Dec. 23, 1896: Cattle, 2,013; sheep, 2,086; hogs, 6,331.

The export market is still very quiet. Shippers are holding back as long as practicable in the hope that lower rates will be quoted for January and February, and a good deal of the cattle which would otherwise go to England will be sold here. There was very little demand for exporters on either market days; ruling prices were from 3 1/2c. per lb. to 4c. for highest.

Butchers' Cattle.—Only six carloads for Montreal; very few prime, top sorts. Medium butchers' sold at 3c. per lb.; inferior at 2c. per lb. Good choice cattle for Christmas killing, 3 1/2c. was paid.

Bulls.—Only a few on the market; sales quoted at 3c.; prices ruled 2 1/2c. to 3c. per lb. to hold for future export.

Nothing done in stockers.

Sheep.—In good supply; fair average quality; a few good Shropshires, the first we have seen for a considerable time, quoted at 3c. per lb.; bucks at 2 1/2c., or \$2.50 each.

Lambs are steady, at former quotations; there being sales at 3c. to 4c. per lb.

Calves.—Light offerings; all hold; choice veals \$5 to \$6 per head; good calves sell for \$4 each. A few good veals wanted.

Milk Cows and Springers.—Quiet; prices ruled from \$20 to \$35 per head. Only good cows in demand for city dairies.

Hogs in full supply; nearly six thousand for the week; prices firm; market steady. The best sold at 4c. per lb., weighed off cars. Thick fat, 3 1/2c. to 3 3/4c. per lb. Light hogs, per cwt., \$2.75 to \$3.00.

Eggs.—Cooler weather has steadied values and the tone is now firm. City warehouses quote: Limed, 14c. to 16c. per doz.; cold storage, 16c. to 18c. per doz.; strictly new laid, 20c. to 30c. per doz.; guaranteed, 35c. per doz.

Butter.—Large dairy rolls, 12c. to 13c. per lb.; dairy rolls, 15c.; creamery rolls, 19c. to 20c. There is no special feature in butter just now; supplies are adequate and demand fair.

Cheese.—Demand moderate, prices steady; summer make

sells at 9 1/2c. to 10 1/2c.; supply fair; no great amount of stocks in store.

Dressed Hogs.—Dressed hogs are firm. Street sales of light weights were made at \$5.10; car lots were sold at \$5.00; heavy were quoted at \$4.50.

Hides are steady at last quotations; trade is quiet. No. 1, green, 6 1/2c., and steers 7c. per lb.; No. 2, 5 1/2c.; No. 3, 4 1/2c.; No. 1, cured, at 7c.

Skins.—Calf skins, 6c. to 7c.; No. 1, cured, 70c. to 80c. Sheepskins, 75c. each.

Wool.—Fleeces combings, 21c. to 22c.; tub-washed fleeces, 20c. to 21c.; rejections, 17c.; pulled supers, 20c. to 21c.

Poultry.—A splendid show at the St. Lawrence market of all kinds of poultry at very moderate prices. Chickens, 25c. to 40c. per pair; turkeys, 8c. to 10c. per lb.; geese, 5c. to 6c. per lb.

Grain.—On the street market to-day 1,000 bushels of wheat sold at 82c. for white; for red, 87c. per bushel; No. 1 hard, 94c. We have the highest price for wheat on the Continent of America, as may be seen by the following quotations:—

	Cash.	May.
Chicago	76 1/2c.	79 1/2c.
New York	82 1/2c.	85 1/2c.
Milwaukee	76 1/2c.	79 1/2c.
Toledo	82 1/2c.	85 1/2c.
Detroit	82 1/2c.	85 1/2c.
Duluth	87c.	90c.
Toronto	87c.	90c.
Toronto, No. 1 hard	94c.	97c.

About fifty loads were taken for export. This was a feature of to-day's market. There was also an enquiry for white wheat for export, 80c. being bid. Holders are firm and sales cannot be made at this figure.

Barley.—About 1,500 bushels of barley sold at 27c. to 34c. Market very dull.

Oats.—Eight hundred bushels of oats at 23c. to 24c. Market quiet. Some export enquiry.

Rye.—One load sold at 34c. to 35c.

Hay.—Demand limited. Twelve loads sold at \$13 to \$14 per ton; baled, \$2.50 to \$3.00 for No. 1.

Straw.—Six loads of straw at \$9 to \$10; baled at \$6. Toronto, Dec. 25, 1896.

Montreal Markets.

Cattle.—Buying for the Christmas trade, instead of being confined to one principal day, as is usually the case, was this season really spread over several. Neither was there any great display made, nor a great number of fancy cattle in. There was, however, a display of fairly good cattle, taking them all together. The highest price we heard of as being paid for prime beefs was 4 1/2c. per lb. There may possibly have been a shade better, as some dealers held out very strongly for 5c. and others at 4 1/2c. but we do not think any sales were made at these figures. Some of the larger butchers made the most of the good cattle on offer and laid in a supply for some time ahead. This helped, to some extent, in maintaining a pretty fair average price on what would otherwise have been a poor market, owing to the heavy runs for several markets. Choice to fancy beefs, 4 1/2c. to 4 3/4c.; good, 4c.; medium to fair, 3 1/2c. to 3 3/4c. per lb.

Sheep and Lambs.—An exceedingly light run on the last two markets caused quite a keen competition, and good fat ewes and wethers sold up to 3c., and in one or two instances a shade stiffer—a better price than has been paid for a number of months. The demand for lambs also ran prices up a little, and 4 1/2c. to 4 3/4c. per lb. was paid for good stock.

Live Hogs.—Only ordinary runs have been in, for which 4c. was paid for choice light hogs and 3 1/2c. to 3 3/4c. for heavy and mixed packers.

Hides and Skins.—This market has suffered very little movement since the decline of one cent per lb. noted recently, and on an even Chicago market will remain steady for some time. The time at present prices, as the tanners keep up a fairly active demand. Dealers are now paying to butchers for green salted hides, heavy or light, 7c., 6c., and 5c. per lb. for No. 1, 2 and 3; 6c. for No. 1 calf skins, 4c. for No. 2; lamb skins, 75c. each.

DRESSED MEATS MARKET.

Hogs.—For freshly killed light bacon hogs there has been an active demand, and as high as \$5.30 per cwt. was paid for a car of choice light hogs early this week. For heavier grades of 200 lbs. and over \$4.90 to \$5.00 is obtainable in car lots. Small lots and single carcasses make from 25c. to 35c. advance on these figures.

It would be well to impress on feeders and farmers the necessity there is for catering to market requirements. This at present is being very seriously neglected, and from the tone packers are at present taking it would not be unreasonable to expect a much greater difference in value between the light bacon hog and the heavier. At present, owing to the large amount of feed in the hands of farmers, they are finishing a too heavy hog, and the light hogs are consequently very scarce.

Beef.—A better quality offering this week has made prices a trifle firmer, combined with the better tone of the live stock markets. Fresh killed fore quarters, 3c. to 3 1/2c. per lb.; hinds, 4 1/2c. to 5c.; frozen fore, 2 1/2c. to 3c.; hinds, 4c. to 5c. per lb.

Lambs.—Good demand; likely to be higher very shortly; in car lots, 6c. to 6 1/2c.; small lots, 6 1/2c. to 7c. per lb.

Chatty Stock Letter from Chicago.

(BY OUR SPECIAL CORRESPONDENT.)

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

	Present	Top prices	ago	1895	1894
CATTLE.					
1500 lbs. up.....	\$ 4 55 to 5 35	\$ 5 90	\$ 4 65	\$ 6 10	
1200 @ 1500.....	4 30 to 5 35	5 45	4 70	5 60	
1200 @ 1250.....	3 40 to 5 50	5 30	4 50	5 30	
1050 @ 1200.....	3 35 to 4 65	5 10	4 40	4 75	
900 @ 1050.....	3 35 to 4 65	4 85	4 40	4 40	
800 @ 900.....	2 85 to 3 80	4 10	3 75	3 50	
Fat cows and heifers.....	3 00 to 4 10	4 50	4 00	3 40	
Canning cows.....	1 00 to 2 35	2 30	2 25	2 10	
Bulls.....	1 50 to 4 40	4 00	4 00	3 75	
Calves.....	2 75 to 4 75	5 60	6 00	5 25	
Texas steers.....	2 50 to 4 30	4 20	3 80	4 00	
Texas C. & B.....	2 00 to 3 65	3 15	2 80	3 40	

Hogs..... 3 15 to 3 45 3 40 3 57 4 55
Heavy..... 3 25 to 3 45 3 40 3 57 4 75
Light..... 3 20 to 3 45 3 40 3 57 4 35
Pigs..... 2 50 to 3 45 3 35 3 55 4 10

SHEEP.
Natives..... 2 00 to 4 00 4 50 3 75 3 85
Western..... 3 00 to 3 50 3 50 3 25 3 50
Lambs..... 3 00 to 5 50 5 25 4 50 4 00

The past year has been one that will long be remembered by stockmen as a hard one, and yet they suffered less than people in a great many other lines of business.

Following was the monthly range of prices during the year on the two principal grades of beef steers:

	1,200 to 1,350 lbs.	1,350 to 1,500 lbs.
Beefsteers.....	average 1,200 to 1,350 lbs.	
January.....	\$3 20 to 4 80	\$3 40 to 4 90
February.....	3 10 to 4 55	3 30 to 4 70
March.....	3 10 to 4 70	3 40 to 4 60
April.....	3 00 to 4 50	3 20 to 4 75
May.....	3 30 to 4 50	3 45 to 4 50
June.....	3 35 to 4 55	3 50 to 4 65
July.....	3 25 to 4 55	3 40 to 4 60
August.....	3 15 to 5 00	3 40 to 4 90
September.....	3 00 to 5 10	3 35 to 5 30
October.....	3 20 to 5 25	3 35 to 5 30
November.....	3 40 to 5 25	3 50 to 5 45
December.....	3 40 to 5 35	3 50 to 6 30

Yearly average..... 3 95 to 4 60 4 15 to 4 85
The average prices for 1896 on 1,200 lb. to 1,350 lb. steers was about \$3.95, against \$4.60 in 1895, with the 1,350 lb. to 1,500 lb. cattle averaging about \$4.50, against \$4.85 in 1895.

Losses from hog cholera in Iowa have been extremely heavy, and there are large sections of that important State where there are no young hogs and any amount of corn and other feed. The hog prices for 1896 averaged \$3.50, or 15c. lower than ever before, being 80c. lower than in 1895 and about \$1.50 per 100 lbs. lower than the average for the last twenty years. The hog market has shown but little change lately. Receipts are quite small compared with exportations and also with last year. The general demand for hogs has been good, and unless receipts increase materially there is sure to be an option in prices soon. However, the packers are expecting that the hogs will begin to come more freely soon and do not expect to have to pay more money. The export movement in hog products is increasing. One Chicago concern, which is by no means a large one, bought 25,000 hogs in the past ten days to be packed and cured chiefly for the English markets.

Horse receipts at Chicago for the year past were 7,000 less than in 1895, but were that much larger than any other year on record. During the first nine months of the year exporters bought about 8,000 more horses in Chicago than in any previous year. It was owing to this fact that prices for the year averaged a little higher on good grades than in 1895.

The British Markets.

Since last writing a sharp advance has taken place in London and Liverpool, to only be followed on the next market by an equally sharp decline. Quotations stand as follows, sinking the offer: Best States cattle, 15c.; Canadians, 11c. Sheep, 11c. to 12 1/2c. for tops.

Glasgow, which has been very poor of late, has this week moved up, and sales of Canadian stock have made shippers a slight profit. Quotations for dressed beef about 10c. per lb.

ENTOMOLOGY.

Insects Injurious to Farm Crops in Canada, '96.

BY DR. JAMES FLETCHER, DOMINION ENTOMOLOGIST.

There has been plenty of work for the practical entomologist during the past season. Not only have the usual pests which occur every year been active, but some of the less frequently occurring species have required attention, and one or two insects not previously recorded as injurious to Canadian crops have appeared. One of the most noticeable features of the year's work has been the increased interest in the subject as shown by the number of inquiries from practical farmers. Spraying for the protection of fruits from their insect and fungous enemies may now be claimed as a generally adopted method by the best horticulturists.

CEREALS.—For some years we have heard little of injury by the wheat midge (*Diplosis tritici*), but during the past season it has been noticed in small numbers in Nova Scotia and Ontario. The Hessian fly has also been responsible for more loss this year than for the last year or two. It will be well, therefore, for farmers to remember that the burning of all dust, small seeds, etc., from the threshing machine is advisable; this is a practice which will be useful not only for destroying the pupae of the above named insects, but will also destroy the seeds of many noxious weeds. If the Hessian fly becomes more abundant next year it will be necessary for farmers to resort to the old practice of sowing their fall wheat later. By the 15th of September nearly all of the Hessian flies have laid their eggs and perished, and this date for sowing is not too late to give good crops of wheat. In Manitoba, a new injurious insect has appeared in small numbers at Souris. This is the wheat sawfly (*Cephus pygmaeus*). The injury was very small, but it is well to mention it so that the habits of the insect may be known in case it should increase and become as destructive as is sometimes the case in Europe. Notices of the occurrence of this wheat sawfly in America during the last three or four years have appeared in entomological journals, and last year I collected specimens of the perfect flies in Manitoba, which it was thought at the time had fed on some of the native grasses; but during August last I received from Mr. John Wenman specimens of wheat stems which contained the larvae and which had drawn attention in the field by being broken down, owing to the larvae burrowing inside them. The life history is briefly as follows: The egg is laid during June or July by a black and yellow four-winged fly expanding from a half to five-eighths of an inch. The egg is inserted below the first joint in the green stem; from this egg hatches a little white grub which lives inside the straw and completes its growth about the time the wheat is ripening, eating away much of the interior tissues of the stem and frequently causing it to bend over or fall altogether. When full-grown, the grub burrows down to the very bottom of the straw, a little below the surface of the soil, where it forms a cell and there passes the winter, changing to a pupa only a week or two before the perfect fly appears nine months later in the following June. The remedy which naturally suggests itself for Manitoba is burning over the stubbles soon after harvest and burning the straw (according to the usual practice in that Province) as soon as possible after threshing, instead of waiting till the following spring.

FODDER CROPS.—Hay and fodder crops have suffered severely from drought, grasshoppers, and the army worm. Early in the season it was anticipated, from the enormous numbers of young grasshoppers which swarmed in all grass lands, that these pests would be even more numerous than in 1895. They developed very quickly, and specimens of the common red-legged locust with fully developed wings were taken at Ottawa as early as 21st June. Some applications were received for a pattern of a hopper-dozer; but before these were constructed it was in most instances too late to use them effectively. It soon became apparent as July passed by that grasshoppers were being much reduced in numbers by natural causes. Many correspondents observed the abundance of the locust mite *Astoma gryllarium*, a small, bright scarlet object which may be seen attached to grass-