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Omnium rerum, ex quibus aliquid acquiritur, nihil est agriculturâ melius, nihil uberius, nihil homine libero dignius.—Cicero: de Officiis, lib. I, cap. 42.

VOL. IV. HALIFAX, N. S., AUGUST—SEPTEMBER, 1881.

No. 18.

Crop Reports.

FROM COLONEL W. E. STARRATT, PARADISE, ANNAPOLIS CO.

In compliance with your circular of the 24th inst., requesting information as to the present condition and prospects of the crops in this district, I submit a few remarks in relation thereto, which have been derived from my own personal observation and other sources. The spring opened with cold and wet, which made it backward for farmers in planting their seed, except on very dry soil or lands thoroughly underdrained.

Winter wheat, which was but little cultivated a few years ago, was generally sown last autumn, and I am pleased to state has given a large yield—producing on an average about 20 bushels from one.

Spring wheat has made a good growth of straw, but is now uncertain, being injured this year by the weevil.

Corn is very late and will be a light crop; many of the farmers grow the sweet corn for canning purposes.

Winter rye is more generally sown on new lands—this year the yield is excellent; the same may be said of oats and other grains.

Potatoes did not come well, owing to the very wet weather, and will not give as large a yield as last year. Mangels and turnips did fair for a good crop at the present writing.

Fruit—The apple trees gave a full blossom, but it is considered by competent judges that the crop will be under

an average one—only late varieties, such as the Nonpareil and Baldwins, giving much promise.

The Hay crop is a very heavy one, but the long continuation of dull, rainy weather through the haying season has caused much of it to be housed in bad condition. The very high tides of this month have caused much damage to the standing grass by the overflow of the dykes; the damage may be roughly estimated for this County to be at least \$2500.

Hoping these remarks given briefly will be satisfactory,

I am, &c.,

W. E. STARRATT.

Paradise, Aug. 26, 1881.

FROM CHAS. E. BROWN, ESQ., YARMOUTH.

Yarmouth, Aug. 25, 1881.

Your circular as to crops received this morning. The hay crop throughout the county is generally reported as good, and estimated at one quarter greater than the average; quality somewhat injured by the wet and overcast weather of the last month. No loss from floods. Encouraged by last season's results, a much larger width of grain sown this year; the fields show rust, but extent of damage not yet known.

Potato and other root crops good. Fruit crop small, except in small fruits, of which the supply was in excess of the home market, and considerable shipments of strawberries were made to Boston with fair returns.

CHARLES E. BROWN.

FROM DAVID ARCHIBALD, ESQ., UPPER MUSQUODOBOIT.

In answer to your letter, I would beg to state that the hay crop in this district, as regards growth, is about an average one, but at this date, in consequence of dark weather and rain storms, one-half of the crop has not yet been secured. Losses by high water in said crop have not been so great as the losses in the quality of the hay in not being secured in the proper season. The low lands are so wet that in many cases it is impossible to pass teams over them or take the crop off that still stands upon them. The wheat crop, I might say, by weevil, is an entire failure, the breadth sown this year is not so large as last, yet the amount sown is large enough to cause very serious loss. Oats and barley have grown a heavy crop of straw upon the ground, and, in consequence, the heavy rains have beaten down and lodged the crop in many instances, which will probably reduce it below an average. Potatoes gave promise of a large yield until within two weeks, since then the blight has shown itself over this crop to a fearful extent. Buckwheat gives promise of a large yield. Turnips look fair, but a little behind in growth for this season of the year.

Although the agricultural outlook with us for the present year is somewhat gloomy, yet we have no right to complain, inasmuch as our Agricultural interests for many years past, upon the whole, have been rather encouraging.

DAVID ARCHIBALD.

FROM HON. HIRAM BLACK.

Anchet, Aug. 25, 1881.

Your request for a brief statement respecting the crops in my district came to hand yesterday. Some pieces of oats have been killed by the tide, and some small patches of hay are so covered with mud that they cannot be cut. While the loss by the tide will be felt somewhat by a few persons, in the aggregate it will be very small. The loss by the wet weather is a serious one, and every day becoming more so; in fact, should the weather continue a couple of weeks longer it will become terrible.

Not one-half of the marsh English hay has been secured, indeed some large hay farmers have only one-third of their crop yet housed. The crop is above an average one, still I do not believe five per cent. of the English hay this year will be first class—cut in proper season and well cured without damage by rain or fog or tide. Under the best of circumstances the hay cut after this can only be fair to middling. There has been very little entirely lost, and very little also will be really fit to press. It will be nearly all fit for feed for young cattle, making fair but not fattening feed. If our hay has to contend in market with hay from sections of the country having had a good harvest, the commercial loss will be fifty per cent.—not so much, if all the country suffers alike, as the best hay that can be got will have to be used, poor though it may be. The later grasses are lighter than usual.

The weather has damaged the wheat crop materially, so rank a growth was produced that the rains lodged it so badly that almost every field has portions lying which do not fill and will be an utter loss. Then a kind of rust has attacked many fields, which will reduce the yield in quantity and particularly in quality. Other crops suffer from rank growth, but not so much as wheat. The potatoes are going with the rust, about the usual time of the month but, considering the season is late, early. Hay suffering to be cut; Grain ripening and no weather for harvest. Never saw such beautiful prospects for the farmer so blighted by a few weeks of bad harvest weather.

HIRAM BLACK.

FROM JOHN ROSS, ESQ., NEW GLASGOW.

I have to inform you that in this district the crops have been looked upon as very favourable up to about two weeks ago. But the weevil has made its appearance with a most destructive effect. None has escaped as far as I can learn, except wheat sown in April and in the first three days of May. The damage done to the wheat crop in this county is enormous, as more wheat has been sown than in any

previous year. I heard one farmer saying that the weevil injured him to the amount of two hundred dollars.

There has been most unfavorable weather for hay-making since the 4th inst. A great many in this neighbourhood finished hay-making in the good weather in July, but further up the river and in inland settlements the hay crop is not nearly secured, and is greatly damaged in quality.

Potatoes, Oats and Barley are very promising.

JOHN ROSS.

New Glasgow, Aug. 24, 1881.

FROM THE PICTOU AGRICULTURAL SOCIETY.

Pictou, August 27th, 1881.

In reply to your favor of the 20th, I have to state that the matter was brought before the meeting of our Society yesterday, and the information received is contained below:—

Hay, above the average, generally well saved, except on low lands.

Oats promise a large return.

Wheat.—Early sowing good; late sowing uncertain; some weevil.

Barley, good.

Potatoes, good; no disease as yet.

Turnips promise well.

Stone Fruit, excellent.

Apples, a poor crop.

The above information applies to our own district, where we have had a good deal of rain but no floods.

JOHN D. McDONALD,
Sec'y Pictou Ag. Soc'y.

FROM GEORGE WHITMAN, ESQ., ROUND HILL, ANNAPOLIS.

Round Hill, Annapolis, Aug. 27, 1881.

Your letter of the 23rd inst. was duly received. This season has been the worst here for many years, the frequent and heavy showers of rain from the 1st of April to the 15th inst. have very much injured the crops. The high and sandy soils have not suffered so much, but are more or less injured by the continued wet weather. The high tides of the 17th inst. overflowed and broke in some of the dykes near Annapolis Town and other places along the Annapolis River, and swept off the hay and damaged the grass, estimated by some about a thousand dollars. Hay, although an abundant crop, fully one-fourth has been so much damaged by rain it is worthless for fodder. This being the odd year, apples will not be anything like the abundant crop of last, but will not come far short of an average one. Wheat, a greater breadth sown than for many years, was much injured by the wet, but as a whole the crop is fair. Rye, oats, and barley have improved

in the fine weather the last ten days, especially the late sown, and promise a fair yield. Potatoes will be short of an average crop. Corn, with but few exceptions, a failure. Turnips, mangolds, sugar beets, &c., where the land has been properly drained, promise a good yield.

GEORGE WHITMAN.

FROM ARCHIBALD A. MCGILLIVRAY, ESQ., ANTIGONISH.

Antigonish, Aug. 29th., 1881.

In reply to yours of the 23rd inst, I am very happy to favour you with the pleasing intelligence that the present condition and prospects of the crops in this district are more encouraging than they were three or four weeks ago. We have had, since the first of this current month, weather which was calculated to be very unfavourable to all the crops, and the people felt that the total destruction of all the crops was inevitable, but now the weather having cleared up and become more favorable, the crops of all kinds show a healthy and prosperous condition. I do not mean but there are as usual exceptions, for some wheat fields show the ravages made by the weevil. Those exceptions seem to be limited to the wheat that was sown between the middle of May and the first of June. Early sowing looks well and is now fit to be bound, late sowing looks well and promises to be a good crop.

That a good deal of our hay crop has been housed in a partially damaged condition there cannot be a doubt, and that a good deal has yet to be made which is also partially damaged by the weather not permitting it to have been made in season, still it is impossible to estimate the actual loss.

ARCHD. A. MCGILLIVRAY.

FROM B. ZWICKER, ESQ., MAHON BAY, CO. LUNenburg.

Mahone Bay, Aug. 29th. 1881.

In reply to your request, I will give you, I think, as near a correct statement as can be given at present. The hay crop is very good, some of it was damaged with the wet weather, but none lost, there was a great deal more made than last year, the dry land was extra. The wheat is somewhat damaged by weevil, but I think will be an average crop, the wet weather caused a great deal of the grain to lodge. The winter rye is very good, some of it reached the height of eight feet; the barley I never saw look better, and, thank God, we have very fine weather to make it, it is two or three weeks later than last year; the blight has taken the potatoes, but I think if the weather continues dry there will be very few lost; other roots are very fine.

R. ZWICKER.

FROM C. F. EATON, ESQ., CORNWALLIS,
KING'S CO.

Lower Canard, Aug. 30th, 1881.

In answer to yours of the 23rd, making enquiry about present condition and prospects of the crops in this district, I beg to say: The hay crop has been the largest known for many years. The frequent rains have also given excellent pasturage. Grain of all kinds is a good yield, more than an average has been sown, both of wheat and oats, which are the principal cereals in this district. The potatoe crop is looking well, and, if the weather is not too wet the remainder of the season will no doubt be a good average yield.

Fruit, apples below an average, both in quantity and quality, so far as the present prospect indicates. Pears, plums, and other fruit generally, a good crop. The frequent rains have done considerable damage to the hay, probably not more than one half of the crop has been secured without being more or less injured. The fine weather the last few days has been greatly improved by the farmers in getting their hay and grain secured. The injury done in this district by the late high tides has been very trifling, in fact when compared with that done in other parts of Nova Scotia and New Brunswick, is not worth naming.

C. F. EATON.

FROM W. H. BLANCHARD, ESQ., WINDSOR.
Windsor, N. S., Sept. 2nd, 1881.

In reply to your favor relative to the condition of the crops in this part of Hants County, I may say: The wheat crop, which this year is a very important one, is looking very well. The straw generally is strong but not very bright, the berry well filled and but little damaged by weevil. It was estimated that over 60,000 bushels of wheat were grown in this county in 1880, and I think that it will be increased by at least 50 per cent. this year. The crop is now being very generally harvested, and the weather is fine. Oats are quite an average crop. Barley looking fairly well, but not a great breadth sown in this vicinity. Hay a very heavy crop, but owing to the lateness of the season is not yet gathered in, probably half of it was mown during the rainy season of July and August, and has been more or less bleached, but quite a large proportion of the whole crop of hay will be harvested in good order. Probably it will be damaged to the extent of 10 per cent. by the bad weather and the late harvesting. With the exception of two or three instances no damage has been done to the crops by floods or the high tides breaking the dykes in this part of the County.

The root crops are looking fairly well, but it is feared that the potatoes have been seriously affected by the hot, damp weather of August.

W. H. BLANCHARD.

FROM JOHN MCLENNAN, ESQ., MIDDLE
RIVER, VICTORIA.

Middle River, Aug. 30, 1881.

In reference to the damage done to the Hay crop by the continual wet weather during the present month, it may safely be estimated at one-third lost to this district, and what is saved is very inferior.

The Wheat crop may be reckoned an entire failure, owing to the ravages of the weevil. Large quantities were sown, calculating on a large crop, and hence the disappointment.

Barley and Oats promise to do well.

Potatoes being late in consequence of the cold spring were late before coming to maturity, together with the early appearance of the disease, will make the crop at one-half of last year's average.

Such a long continuance of wet weather was never before seen in this district and over the whole of the Island of Cape Breton.

JOHN MCLENNAN.

FROM JOHN MCKEEN, ESQ., MABOU.

Mabou, Sep. 3, 1881.

In compliance with your request, in letter of 22nd ult., for a brief statement of the present condition and prospect of crops in this district, I have to say, that at present the outlook is most encouraging, should good harvesting weather favor us.

The Hay crop is above an average; but, of necessity, a great deal of it must have been secured in second-rate condition, and a great deal yet remains to be secured. Beyond this depreciation in the value of the hay from late cutting and bad curing, I think no actual loss has occurred from heavy rains and floods.

The grain crops never looked more promising, but the harvest will be unusually late, there being no grain cut in the county yet, except fall wheat, which proved an excellent crop, but little sown.

There is a much greater area under Spring Wheat than for many years, and the prospect of a good crop is very flattering. Little, if any damage from weevil or rust is reported, so far.

The Potato crop promises to be above an average. No blight to speak of except in cases where old, run out seed is used. Turnips, Mangold, Sugar Beets, and other roots are putting forth an extraordinary growth.

The Apple crop is light, but Plums are likely to be above an average.

Should we be blessed with fair harvest weather, the farmers of this district, not-

withstanding the almost sunless hay-making, may yet number this as one of their most prosperous years.

JOHN MCKEEN.

FROM ISRAEL LONGWORTH, ESQ., TRURO.

Truro, Sep. 7, 1881.

In reply to your late favor about the condition of the crops in this quarter, permit me to state briefly as follows:

First, as regards cereals. Winter Wheat has done well wherever sown, though, I am sorry to say, very few farmers have as yet given it a trial. A large quantity of seed will be sown this autumn on account of the great destruction done to spring crop by weevil. In many fields of late sown wheat the insects appeared in such numbers that the owners, instead of waiting for the grain to be eaten up, cut it down for fodder. Other grains.—Oats and Barley particularly, will be an abundant crop, and at no former period was a greater crop of straw known. The old barns are already beginning to burst with new straw.

Hay has been a good crop, although the weather for saving it could not have been much worse. A good deal of marsh grass is still standing, and the dyke lands will not be all clear short of a fortnight. I am inclined to believe that the injury done this crop hereabouts from heavy rains and the overflow of the dykes, will not be nearly as great as at one time was apprehended. In most cases the dykes were repaired to prevent a second tide from flooding the marshes, and heavy rains since have washed off most of the mud deposited by the first tide.

With the exception of potatoes, the root crop is fully up to that of any former year. The blight has struck the potato fields, but to what extent this crop is injured, cannot yet be predicted. On account of the very large acreage planted, should a quarter turn out bad, the crop will be a fair one.

Such a wet haying season has not been experienced for about eighteen years, and this is a blessing which farmers should not forget.

ISRAEL LONGWORTH.

Mr. IVERS W. ADAMS writes from Bathurst, N. B. to *Forest and Stream*, that he tried a dozen prescriptions for repelling mosquitoes, flies, and similar pests, and found none of them effective until he came across the following, which are dead sure every time: "Three oz. sweet oil, 1 oz. carbolic acid". Let it be thoroughly applied upon hands, face, and all exposed parts (carefully avoiding the eyes) once every half hour, when the flies are troublesome, or for the first two or three days, until the skin is filled with it, and after this its application will be necessary only occasionally. Another receipt, equally efficacious, is: Six parts sweet oil, one part creosote, one part pennyroyal. Either of these is agreeable to use, and is no way injurious to the skin. We have both of these in our camp with us, and all flies keep a safe distance."

NOVA SCOTIA REGISTER OF THOROUGH-BRED STOCK.

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JERSEY BULLS.

30.—ANTELOPE.

Light Fawn on back, dark head, neck and sides, black points, switch and tongue. 1927 Am. Club. Calved May 5th, 1875. Bred by J. Milton Mackie of Great Barrington, Mass., and sold to E. M. Jones, Brockville, Ont. Now owned by Edward Blanchard, Ellershouse, N. S. Sire Golden Ball 1474 Am. Club. Dam Salfrano Rose 3676 Am. Club, by Colt's Pierrot imp. 636 Am. Club, gr d Dainty (Colt's) imp. 796 Am.

31.—ABDURRAHMAN.

Light fawn shading darker towards the head. Calved April 30th, 1880. Bred and owned by Edward Blanchard, Ellershouse, Hants Co., N. S. Sire Antelope 30, 1927 Am. Club. Dam Rustie Russy 6501 Am. Club by Prince of Staatsburg 2398 Am. Club, gr d Russy 2nd 3535 Am. Club, g gr d Russy 2235 Am. Club.

32.—LOUIS DEBONNAIRE.

Silver grey, darker about the head. Calved May 4th, 1880. Bred and owned by Edward Blanchard, Ellershouse, Hants Co., N. S. Sire Antelope 30, 1927 Am. Club. Dam Jade 6498 Am. Club, imp., by Faro 1749 Am. Club, gr d Juliana 2nd 3028 Am. Club, g gr d Juliana 2236 Am. Club.

33.—ROMEO DEBONNAIRE.

Calved February 27th, 1879. Bred by Romeo H. Stephens, St. Lambert, Montreal. 4091 Am. Club. Owned by New Glasgow Agricultural Society. Sire Stoke Pogis 3rd, 2238 Am. Club. Dam Jessamine of St. Lambert 5125 Am. Club.

JERSEY COWS AND HEIFERS.

24.—JULIET BONAIR.

Orange Fawn, white switch. Calved March 31st, 1879. 8850 Am. Club. Bred by Wm. B. Densmore, Staatsburg, Dutchess Co., N. Y. Owned by Edward Blanchard, Ellershouse. Sire Doesticks 2387 Am. Club. Dam Rustie Russy 6501 Am. Club by Prince of Staatsburg 2398 Am, gr d Russy 2nd 3535 Am. Club, g gr d Russy 2235 Am. Club.

25.—LIGNA DEBONNAIRE.

Solid orange fawn, black points and switch. Calved April 22nd, 1880. Bred and owned by Edward Blanchard, Ellershouse, Hants Co., N. S. Sire Antelope 30, 1927 Am. Club. Dam Ligna 5th 6494 Am. Club by Faro 1749 Am. Club, gr d Ligna 2237 Am. Club.

26.—HEATHER BELLE 2ND.

Fawn. Calved 1st September, 1889. Bred and owned by James Kitchin, River John, Co. Pictou. Sire Gambetta French 20, 2923 Am. Club. Dam Heather Belle 12 by Lord Sealfield 18, gr d Belle, imp. from Jersey, g gr d Browney (a prize cow in Jersey.)

27.—NELLY.

Red and white. Calved April 24th, 1875. Bred by Charles E. Brown, Yarmouth, N. S. Owned by Charles W. Smith, Sandbeach, Yarmouth. Sire Past Tyler 4. Dam Gracie 8th by Bruno 3, gr d by Dick Swiveller 3rd, 2, g gr d by Pioneer 1.

CORRECTIONS, TRANSFERS, ADDITIONS, &c.

SHORT-HORN DURHAM BULL.

79*—Duke of the Valley, belongs to Windsor Agricultural Society, Co. Hants, N. S.

SHORT-HORN COWS AND HEIFERS.

44.—Nellie Gray. Owned by C. F. Eaton, Cornwallis.
70.—Evelyn. Owned by C. F. Eaton, Cornwallis.
73*—Elsie Nor. Owned by C. F. Eaton, Cornwallis.

JERSEY BULL.

27.—L'Estranger (extended pedigree.) Squirrel gray and white, Calved April 12th, 1876. Bred by A. P. Ball, Stanstead, P. Q. Owned by Barrington Passage Agricultural Society, Co. Shelburne, N. S. Sire Alcans 533 Am. Club. Dam Beauty 1319 Am. Club.

GUERNSEY BULL.

3.—Gold Dust. Owned by W. J. Vieth, Halifax.

GUERNSEY COW.

2.—Bertha 2nd. Owned by C. Anderson, Halifax.

Ayrshire Bull.

68.—Zulu. Red with some white on face and sides. Calved Nov. 5th, 1878.

AYRSHIRE COW.

101.—Belle of Brookside. Owned in Cape Breton.

VICTORIA, B C., Aug. 30, 1881.

Dear Dr. Lawson,—I need hardly tell you that although my engagements here will prevent my being present at the Dominion Exhibition, I am watching with great interest the exertions you are putting forth to make it a success, and I trust it will at the same time do honor to Halifax and to Nova Scotia. I know when a real push is made that great results can be attained in our own Province, and, if our people really do their best, they will be themselves surprised at what they can do, and what they can produce. There is one branch in which, somehow or other, we are not improving as we ought, in fact I fear we are actually going back. I allude to butter making, and it is a branch of farming in which we lose a large amount of money annually. Of course there are various qualities of milk, and some breeds of cattle are more profitable than others for butter making, but it is mainly in the manipulation that the difference between good bad butter arises. When we consider the enormous amount of butter made throughout our Province, and consider that the largest portion is unfortunately only to be classed as inferior butter, and hence sells at from 25 to 33 per cent. below the price of a really good article, and when we remember that it costs quite as much to produce as would a good article, and consequently the outlay in both cases is the same, whilst the difference of price would all go to pay for the work, that is, it would all be profit. When we consider this we wonder that more pains should not have been taken to improve our butter making methods. I enclose you an extract from the *Times* description of the Royal Agricultural Society's Show at Derby this year. You will see that this subject is commanding increased attention in England, and owing to our sparse population, and pastoral rather than village system, it is even more important to us. Annapolis deserves credit for having moved in this matter last year, a prize having been offered, if my memory serves me right, by the County Exhibition Committee for the best treatise on butter making. But description, either written or word of mouth, requires practical illustration in order to enforce the instruction given. Could not some such system as that pursued at Derby be profitably introduced at our Exhibitions. It would be a side-show both amusing and instructive, which would have a direct association with the objects of the Exhibition. Hoping the Halifax effort will be in every way a success, I remain yours faithfully,

J. W. LAURIE.

"In the popular and most instructive Working Dairy, under the skillful management of Mr. G. M. Allender, of the Aylesbury Dairy Company, the programme carried out each day includes practical exemplifications of butter-making from whole milk, from cream raised on the American system, from cream raised on the Danish and Swedish systems, and from sweet cream obtained by the mechanical separator, followed by illustrations of butter-working and butter-packing for marketing. The whole of the operations are explained to inquirers by Mr. Arthur Carey. A most valuable feature in this department is the lucid and admirable lecture on the principles of butter-making, delivered at half-past two o'clock on each day of the show, by Dr. Voelcker. There are three especial novelties. One is an apparatus in which milk for cream-raising is set in cylindrical vessels immersed in water, with the water not only surrounding each vessel but also passing through a tube formed in the centre of it. This new apparatus is cheaper than the American "Cooley" creamer for the same purpose. Another novelty is the Lefeld centrifugal machine for cream-raising, operating in a different manner from the Laval separator; and the third now machine is a centrifugal cream-raiser, only just procured from Denmark by the Aylesbury Dairy Company. This machine, driven at only 1,500 instead of 5,000 revolutions per minute, as in the case of the Laval separator, takes out the cream perfectly from 120 gallons of milk in an hour, which is about four times the rate of performance of the other. Looking into the top of the whirling cylinder, the milk and cream are seen standing up in two distinct white walls around the vessel, and a couple of brass syphons dipping in run off the two products as they collect inside."

Covent Garden Market,
London, 4th August, 1881.

Messrs. JACK & BELL, Halifax.

Dear Sirs,—The near approach of another apple season is sufficient excuse for our writing you such particulars as are likely to benefit you and your friends.

Being one of the oldest, if not the oldest firm in the fruit trade, we are best qualified from actual experience to give such hints as must be of benefit to those who intrust their goods to our care. At the commencement of each season we make it our business to learn the prospects of each section of the different apple growing districts, and our friends at regular intervals advise us of any change as to the crops in Belgium and Holland, whence supplies come to all our markets. Our firm, Messrs. Simons, Jacobs & Co., of Glasgow, are in constant communication with their agents, and their information is such as can be relied on. Our advices from these countries state that their crops are large; but, as the quality is generally inferior, they are not likely to contend much with those grown in your province.

The great fruit growing sections in England are Middlesex and Kent, both

in close proximity to London. In these two counties nearly the whole of the best classes of apples are grown, and from them London is supplied. In years gone by when American or Nova Scotian apples were almost unknown (perhaps with the exception of Newtowns) these growths were much sought after. The importation of American apples to Liverpool and Glasgow having increased to an immense extent, the London dealers at intervals purchased at these ports, and, within the last two or three years, have learnt that the best varieties both for eating and keeping are those that are shipped from New York, Montreal, and your province. We feel convinced that, as years roll on, late varieties of English apples will die out and none but early Fall fruit be grown. One of our personal friends in Kent (the largest fruit growers in England) assures us that in his district all late varieties have been cut down and it will be but a very little time before the London markets will have to depend on America solely for their supplies. This may appear of very little importance, but when it is taken into consideration that London alone has 4,000,000 inhabitants, we are sure this market will in time outrun all others in demand.

The season now approaching is one that will require a great deal of care and attention on the part of shippers, and we feel certain that any of our friends who follow our advice will be sure to have satisfactory results. Having been in correspondence for many years with most of the best shippers in the fruit growing districts of Nova Scotia, we can confidently refer to them as to our having at all times been correct in our estimation of the prospect.

Too much stress cannot be laid on the care and attention required in the packing of the fruit, as the best goods at all times realize the highest prices. Buyers having to resell their purchases, they strive to buy those brands that have turned out to their satisfaction. The mode of selling in Covent Garden Market is such as must meet the approval of those interested in the welfare of the fruit trade. The plan is simple and satisfactory to both buyer and owner. Goods are at once landed, stored and assorted according to marks and varieties. When the buyers assemble (having been advised by circular) samples are taken from the piles, two barrels being opened in ordinary parcels. If the buyers wish for more two more are shown. If samples open indifferent a couple more are opened *at our risk*, in the interest of the owners. The goods are then at once put up at auction and sold to the highest bidder. The plan adopted by us in opening just before sale is much the best, as the fruit is seen to best advantage. In all other

markets, with the exception of Glasgow, they are opened from two to three hours before sale, and unless seen at once their appearance is much depreciated and price rules accordingly.

We learn that a regular line of steamers is to be put on to our London market, and we have arranged with the owners here to get all the accommodation our friends require. If any difficulties arise we can arrange, without loss of time, for a special steamer to call at Halifax or Annapolis.

We would recommend no apples being shipped in the early part of the season with the exception of *Ribston Pippins*. This variety is much appreciated here, and should they reach us in good order they at all times command high prices. Should there be no direct steamer to London, arrangements can be made for a through rate by any of Messrs. J. & A. Allan's steamers via Liverpool. There is no delay in transshipment, and as a rule they reach London quicker than by direct steamer. The immense quantities of apples which are shipped to all our markets from Montreal, Boston and New York in the early part of the season, induce us to advise all our Nova Scotian friends to hold their fruit until the beginning of the year, when supplies get much shorter and prices increase rapidly. Of course this does not apply to Greenings and other varieties that are best shipped when they are certain to reach us in good order. Any information that is required we shall be most happy to afford. Hoping the ensuing season may be a satisfactory one to all concerned.

We remain, dear sirs,
Yours faithfully,
GARCIA JACOBS & Co.

P. S.—All expenses are included in our charge of 5 per cent., excepting market dues, 1½d. per barrel, receiving and delivering 2d. per barrel, and cartage same as paid by us. Cash remitted immediately after sale.

The following description of the BEST NEW STRAWBERRIES, by Mr. J. E. Fairweather, of Lower Norton, King's County, New Brunswick, is copied from the *Maritime Farmer*, and will be read with interest by our readers:—

"Last August, I wrote for the *Farmer* a sketch of what I then knew about strawberries. Having now had another year's experience, I suppose I am in a position to write more definitely, as well as more fully. I stated last year that I had imported from New York and New Jersey ten or a dozen varieties of strawberries as well as currant, raspberry, and gooseberry bushes. Of strawberry plants I procured of extra early varieties, "Crystal City," "Duchesse," and "Crescent Seedling." Of medium ripening

sorts, "Sharpless," "Monarch," "Boydén," and "Chas. Downing." Of late kinds "Champion," "Glendale," and "Kentucky." I also had "Forest Rose," "Pioneer," "Durand's Beauty," and "Juennida," and though they had precisely the same treatment as those first named they have not flourished, in fact most of them have died. "Crystal City" is supposed to be the earliest berry known, though I found the "Crescent" equally early and doubly productive. The latter is said to be the most productive variety in existence, and my experience tallies with that statement. It is simply immense in yield; the berries are medium in size, bright scarlet in color, and good in quality. It is a pistillate and must have some perfect flowering kind in its vicinity or it will not bear well. "Duchesse," another standard early sort, I did not allow to fruit, but it came to me very highly recommended. It is a fine grower, and I have no doubt will answer for itself next year. "Sharpless," the largest berry at present cultivated, is a fine grower, leaves and vines a very light green and throws out runners rapidly, fruit from large to very large, irregular in shape, and in quality very good. I had specimens which measured two-and-a-half inches in diameter, and the plants had not been out a year. "Monarch" is another rapid, strong grower, propagates rapidly, fruit large but irregular, holds out large till end of season, flavor first rate, the earliest of the medium class. "Boydén," a fair grower, does not run so freely as some, needs good care and moist land, in quality of fruit has no superior, and but few in size and appearance, the sweetest of the large berries. "Downing," a hardy, strong grower, abundantly productive of fruit of from medium to large size; berries a beautiful shade of scarlet, of conical shape and good flavor, plants do not need renewing oftener than once in five years—a most desirable variety. "Glendale," a good grower, leaves and vines a dark shade of green, runs well, and bears an abundance of large, long, conical-shaped berries, of light scarlet and nice flavor. "Champion" or "Windsor Chief," is another rampant grower, propagates itself more rapidly than any variety tested, and one of the finest in appearance, fruit a fine dark crimson, roundish conical, subacid and wonderfully productive. Like the "Crescent," it is a pistillate, and must be grown near staminate kinds. "Kentucky" I did not allow to fruit, resembles the "Downing" in appearance and habit of growth; fruit is said to be larger than any other variety and equally abundant and good flavored.

Having given the characteristics of the ten varieties above, as far as known, it

will be very natural for some to ask, "what particular variety I would recommend for general cultivation," and, in reply, I would say, for early use, "Crescent Seedling" and "Duchesse;" for medium, "Sharpless," "Monarch," and "Downing;" for late, "Glendale" and "Champion." The "Wilson" berry, which I have not, nor need not describe, is probably one of the best for market, and should be in every collection. There are so many considerations to be taken into account in growing strawberries, that the limits of this paper will not admit of their being fully discussed, but some few hints may be submitted. Those who grow berries for market exclusively, and have a soil not too dry nor too moist, will be safe in beginning with the three great market berries, viz.: "Wilson," "Crescent," and "Champion." These varieties will flourish and pay with ordinary rough field culture. Those who have time and inclination to give more attention to their fruit will do well to try, in addition to the above, "Duchesse," "Sharpless," "Boydén," "Monarch," "Downing," "Kentucky," and so on. Every year a multitude of new seedlings and hybrids are brought out in the United States, many of them no doubt of merit, and many more no better than the old. In making my selections, I sought to obtain the best types of each class—early, medium, and late,—hardiness and productiveness I also kept in view.

Yours, J. E. FAIRWEATHER.

Lower Norton, King's Co., Aug. 8, 1881.

GERM THEORY OF ANIMAL DISEASE.

[A most interesting discussion was conducted in the Pathological Section of the International Medical Congress on August 4th and 5th, on the existence and action of minute organisms in animal cells and tissues. We make extracts from the *Times* report.]

Professor Klebs, of Prague, began by asking, Are there specific organised causes of disease? If we start from the principle that specific diseases can only be produced by specific organisms, the question arises whether such specific differences of a morphological kind can be demonstrated in those organisms which are constantly found in diseased organs. A short survey of the facts which have been up till now discovered in this direction will show in many cases so complete an identity of form in the parasitic organisms occurring in the diseased part in like pathological processes, that the causal inter-dependence of the two seems to be thus made certain.

The three groups of hyphomycetæ, algae, schizomycetæ, have been demonstrated to occur in the animal and human organism in infective diseases. The hyphomycetæ, on account of their needing an abundant supply of oxygen, give

rise to but few morbid processes, and these run their course on the surface of the body, and are hence relatively of less importance. It will be sufficient here to refer to the diseases produced by them—ringworm, favus, and thrush—to show this peculiarity. Only one of the algae, viz., leptothrix, has as yet acquired any importance as a producer of disease. It gives rise to the formation of concretions, and that not only in the mouth but also in the salivary ducts, and the urinary bladder, in both of which organs it forms a constant constituent of carbonate of lime calculi. Since these calculi produce no disturbance except by their mechanical action, the penetration of the germs of these organisms into the tissues seems to be in itself harmless, except when they attack the teeth. Here, as is well known from the researches of Leber and Rottenstein, their presence causes caries. The schizomycetæ furnish, without doubt, by far the most numerous group of infective diseases. We distinguish within this group two widely different series of forms, which we will speak of as Bacilli and Coco-bacteria respectively. The former, which were first exhaustively described by Ferdinand Cohn, and the pathological importance of which, especially in relation to the splenic disease of cattle, was first shown by Koch, consists of threads, in the interior of which permanent or resting spores are developed. These spores becoming free are able, under suitable conditions of life, again to develop into threads. The whole development of these organisms, and especially the formation of spores, is completed on the surface of the fluids, and under the influence of an abundant supply of oxygen. The number of affections in which these organisms have been found, and which may be to a certain extent produced artificially by the introduction of these organisms into healthy animal bodies, has been largely increased since the discovery of Koch, that the bacteria of splenic fever (Anthrax) belong to this group. Under this head must be placed the Bacillus malarie (Klebs and Tommasi-Crudeli), the Bacillus typhi abdominalis (Klebs, Ebert), the Bacillus typhi exanthematici (Klebs, observations not yet published), the bacillus of hog-cholera (Klein), and finally, the Bacillus leprosus (Neisser).

All the diseases named possess one very remarkable common property. They arise from influences which are conveyed to the human body more or less directly from the soil. The conveyance of the disease from man to man, is however, by no means excluded; and in one of the diseases it constitutes, indeed, the most frequent mode of communication. We may, perhaps, assume from the course of the disease that cholera and yellow fever also belong to this group. From the

history of their origin, we may designate these diseases as soil diseases. The second group of the pathogenetic Schizomycetes I propose to call, with Billroth, coccobacteria. I distinguish, further, in this group two genera—the *Microsporium* and the *Monadina*. The former requires a medium poor in oxygen the latter a medium rich in oxygen for their development. Among the affections produced by microsporina I reckon especially the septic processes, and also true diphtheria. On the other hand, to the processes produced by monadina belong especially a large series of diseases, which, according to their clinical and anatomical features, may be characterised as inflammatory processes, acute exanthemata, and infective tumours, or leucocytoses. If we succeed in breeding from one of these objects, organisms which remain constant in form and development, and which, when conveyed to animals give rise to the corresponding diseases, it is even by this alone rendered highly probable that the organisms contained in the cultivation-fluids are the actual causes of those diseases. Finally, we must mention the important results which have been obtained quite recently with respect to the cause of the protective power of certain inoculations with cultivated organisms, and which we owe more particularly to the French investigators, Pasteur, Chauveau, and Toussaint. They have shown that by certain physical operations the virulence of certain specific organisms may be destroyed, though their protective power is preserved. Heat and the action of oxygen appeared to be able to produce this effect. Still it remains open to question in what way the organisms thus enfeebled make the body capable of resisting infection with more active organisms of the same species. The conclusion which appears to me to follow inevitably from this short survey of the results of modern investigation is this—that specific communicable diseases are produced by specific organisms.

Professor Lister was more than ever convinced of the truth and importance of the relations of micro-organisms to diseased processes in wounds, and it was for that reason he now proposed to give what seemed to him a needed note of warning against what he was disposed to regard as an exaggeration in that direction—an exaggeration which was partly due to the success of an antiseptic treatment. For when, as the result of a mode of treatment designed specially to get rid of minute organisms, they get rid, among other things, of inflammatory disturbance, they were naturally led to infer that all inflammation was caused by minute organisms, and that suppuration, whether acute or chronic, was always due to similar agencies. He believed that to be an exaggerated view. From analogies which

he instanced he was inclined to say that inflammation was caused by an abnormal action of the nerves of the affected part, and that its phenomena could not be explained on merely mechanical principles. As to the presence of micrococci in the suppuration, he did not think they were the essential cause of this condition, or that they existed or could exist in the healthy tissues; but only that they were, so to speak, a mere accident of the acute abscess, and that their introduction depended upon the system being enfeebled.

Dr. Charlton Bastian maintained his well-known theory that animate organisms do not come from without, but that they are evolved from the internal or debilitated condition.

Dr. W. Roberts, of Manchester, applying to these minute organisms Dr. Darwin's theory of evolution, said there was nothing strange in the idea that the ordinary organisms found in wounds might change their normal character and become infective, leading to blood-poisoning in its various forms. By evolutionists time was not measured by years, but by generations. It was said that bacteria doubled themselves in twenty minutes, and that in a fortnight they had a thousand successive generations, which were equivalent to a thousands years in the life of the wheat plant, and to 30,000 in the life of man.

Professor Virchow observed that the study of pathological anatomy had been greatly changed by the discovery of parasitic organisms. The recent methods of investigation, notably that of "cultivation," had brought out the important point that the same microscopic organism might at different periods of its life assume different forms. Thus Buchner, of Munich, showed that the organism which produced malignant pustules—the bacillus anthracis—might be modified by "domestication"—that was to say, by a process of cultivation; so that instead of being a sort of wild plant with virulent poisonous properties, it became, as it were, tame and innocent. The same bacillus as that found in hay was produced. On the other hand, the innocent organism found in hay might, by a different method of cultivation, be made to acquire virulent properties. Fed on a vegetable diet, it was thus tame and harmless, but transplanted to another soil and given animal nourishment, it became savage (verwildert) and virulent. These discoveries of Buchner's had still to be confirmed, but he might say that, in his opinion, Buchner was a very trustworthy observer. An assistant of his own, Dr. Gravitz, had succeeded in the bewildering, or making savage of a common form of aspergillus, converting it into a virulent or poisonous organism. Discussing next the relation of animal cells and tissues to the action of these organisms, the learned professor

said some individuals appeared to have a greater power of resisting such influences than others. Through the recent researches of Pasteur, the doctrine of predisposition, which was beginning to be thought old-fashioned, was placed upon a new basis. Tissues, by means of a series of repeated actions, might acquire a great power of resistance to virulent organisms. This in fact brought them to Lister's idea, that unhealthy parts of the body had less power of resisting the action of organisms than healthy parts, which again brought them face to face with the old doctrine of weakness and strength of constitution, which he had always made a fundamental part of his system of pathology.

Professor Pasteur protested against the dangerous theory of Dr. Bastian that the tissues developed microscopic organisms. He was amazed to hear such doctrines in these days. A simple experiment would demonstrate their falsity. If Dr. Bastian took the limb of a living animal, healthy or ill, provided the illness was not *microbienne*, bruised the tissues of it and reduced it to a most unhealthy condition, without, however, breaking the skin, and taking care to exclude microbes from the intestinal canal, he would never find in it the smallest microscopic organism. Had Dr. Bastian forgotten his (Professor Pasteur's) experiment of 1863, by which he had shown that the blood and urine of a living animal introduced into glass vases could not putrify, although exposed to free contact with the air, and with air, moreover, which was constantly renewed, provided only the air was free of germs of organisms? If any deduce was to be given to the spontaneity of transmissible diseases and to the spontaneous generation of microscopic organisms in disease, a fatal blow would be struck at the progress of medicine and surgery. In the study of microscopic organisms there was an ever-present source of error, in the introduction of foreign germs, in spite of the precautions that might be taken against them. He, who had devoted himself for twenty-five years to that branch of study, could well speak of that. When the observer saw first one organism and afterward a different one, he was prone to conclude that the first organism had undergone a change. Yet this might be a pure illusion. His impression was that Buchner was deceived in this way. The description Buchner gave of the appearances upon which he founded the theory to which Professor Virchow had referred led him to think so. He also thought Professor Hueter had been deceived. The transformation of a bacillus anthracis into a micrococcus did not exist. Studies which seemed to show results of this kind were conscientiously made, no doubt, but they were not surrounded with sufficient precautions to satisfy his mind.—*Agricultural Gazette*.

DOMINION Exhibition!

HALIFAX, NOVA SCOTIA,

September 21st to 30th, 1881.

HIS EXCELLENCY THE GOVERNOR-GENERAL, - PATRON.

The Third Annual Exhibition of the Dominion of Canada, will be held in the

CITY OF HALIFAX,

COMMENCING

Wednesday, 21st, ending Friday, 30th September.

The Exhibition will consist of two great Divisions. The first,

INDUSTRIAL AND MECHANICAL,

embracing Machinery in motion, Agricultural Implements, Musical Instruments, Metal, Wood, and Textile Manufactures, Forest and Fishery Products and Appliances, Naval Architecture, Minerals, Mining, and general Manufacturing Exhibits, will be opened to the public, in the

Royal Exhibition Building,

AND THE

NEW MECHANICS' HALL,

ON

THURSDAY, 22nd SEPTEMBER,

at 2 o'clock, P. M., and will remain open to the final close on 30th SEPTEMBER.

The Second Division, embracing

Live Stock, Agricultural & Dairy Produce, Fruits and Flowers,

WILL OPEN ON

TUESDAY, 27th SEPTEMBER,

AT 2 P. M., WHEN THE

GRAND PUBLIC OPENING CEREMONIES

will take place, and Addresses will be delivered by HIS WORSHIP MAYOR TOBIN, Chairman, and other gentlemen. The Horses, Cattle, and other Live Stock will be shown in the spacious Grounds surrounding the Buildings, where ample Cattle Sheds, Stalls, &c., have been erected, and a Horse Track prepared. The Fruits, Flowers, Roots and Vegetables, will be displayed in a special

“HORTICULTURAL HALL” IN THE PUBLIC GARDENS,
near the general Exhibition Grounds, and for which Coupon Tickets will be issued without extra charge.

CASH PRIZES OFFERED, \$15,000.

REDUCED RATES ON ALL RAILWAYS.

The New Brunswick and Prince Edward Island Governments will refund freight on approved exhibits from these Provinces respectively. No charge for entry of exhibits, nor for space.

Admission 25 cts. each time on entering. Children under 12 years 10 cts.

MILITARY AND OTHER BANDS OF MUSIC
WILL BE IN ATTENDANCE.

Every effort is being exerted to render the Exhibition attractive, and to utilize the resources which Halifax, as a GREAT NAVAL AND MILITARY STATION, commands, to make the City worthy of the attention of visitors from the other Provinces.

The requirements of business men, holiday tourists and families, will alike be provided for.

A Suitable Restaurant has been erected on the Grounds, where Meals, &c., will be furnished at reasonable rates by Mr. Charles Woclnough.

A Special Committee is charged with the arrangement of outside attractions, including **GRAND MILITARY DISPLAY**, Public Concerts, Highland Games, Athletic Exhibition, **FIREMEN'S TOURNAMENT**, Artistic Swimming, Water Polo, Dramatic Entertainments; also **STEAMBOAT EXCURSIONS**, to give visitors an opportunity of seeing one of the finest Harbors in the World.

Fireworks and Illuminations: Arrangements have been made by the Commissioners of the Public Gardens of the City to have two Grand **PROMENADE CONCERTS**, one on Wednesday, 21st, and the second on Wednesday, 28th Sept., during which there will be a magnificent display of Fireworks of an original character, conducted by the celebrated firm of Maston & Wells, Pyrotechnists, Boston, Mass., whose Exhibitions on Boston Common, from 1861 up to the present time, have been so highly appreciated.

STEPHEN TOBIN, Mayor of Halifax, Chairman.
GEORGE LAWSON, LL.D., Manager.
WILLIAM McKERRON, Secretary.

FENCING.

In the House of Assembly last session Mr. McGillivray, M. P. P., moved the following resolution, viz:—

"*Whereas*, The fencing of public highways in this province entails heavy expense and labor on farmers, and causes snow to drift in and fill the roads in winter

And whereas It is considered that fencing public highway is unnecessary, provided the law be so amended as to prevent cattle from soaming on those highways in the summer season.

Therefore resolved, That at the next meeting of this Legislature a bill may be brought in for the purpose of so changing the law as to dispense with the fencing of highways to protect crops growing on cultivated lands, and also to prevent cattle and all kinds of farm stock running at large on the public highway.

It is therefore resolved, That during the recess the representatives in this house ascertain the desire of their respective counties, through their county municipalities and otherwise in reference to the subject of this resolution."

This resolution was treated with considerable levity by the House, and finally met the fate too often meted out to useful measures. The farmers of Nova Scotia are under an obligation to the Honorable member for Antigonish, nevertheless. This question of fencing will force itself on the Legislature no matter how reluctant they may be to consider it. True, there are portions of the Province where such a law is unnecessary, and in which a general law would be a hardship, such as the shore districts. There are also parts of Halifax, Colechester, Pictou, and the garden counties of the West, which are highly cultivated and improved, where some regulations are needed. Under these circumstances perhaps a permissive bill, that the people in each school or polling section of the different Counties can adopt at pleasure, is best suited to our needs. P. E. Island has such a bill, it has been in operation for about three years and with such acceptance that there is scarcely a school section on the Island where it has not been adopted. We give below the text of the P. E. I. Bill for the information of those interested. It may or may not, in its entirety, be suited to this Province, but it would form a skeleton which our Legislators could adapt to our requirements:

THE P. E. ISLAND DOMESTIC ANIMALS ACT,
1878, AS AMENDED.

Be it enacted by the Lieut.-Governor, Council and Assembly as follows:—

1. The Boards of School Trustees in the several School Districts in this Island, except Charlottetown, Georgetown and Summerside, shall insert, in the notices of holding the Annual School Meetings under the Public Schools' Act, 1877, a notice or intimation in Form A., hereto annexed, that immediately after the close of said meeting, a meeting will be held at the same place for the purposes of this

Act. All persons qualified to vote at said School Meeting shall be eligible to vote at the meetings to be held under this Act.

2. The said meeting may adjourn from time to time as a majority of voters present shall determine.

3. The Secretary of the Board of School Trustees shall be Secretary of said meeting; and, in case of a vacancy in said office of Secretary of said Board, or in case of his absence or inability to attend, a majority of the voters present shall appoint one in his stead. The said meeting, or a majority of them, shall appoint a Chairman from time to time.

4. The said meeting, or a majority of the persons qualified to vote thereat, may, by resolutions, make such regulations with respect to the time or times of the year in which Horses, Cattle, Sheep, Swine and Geese, or either of them, shall be allowed to run at large in their School District, and also shall decide and declare during what portions of the year the males of either Horses, Cattle, Sheep or Swine shall not be allowed to run at large in said School District.

5. The regulations and decisions agreed to at the said meeting shall continue in force until repealed or altered at some future Annual School Meeting, by a vote of a majority of the ratepayers present entitled to vote for the election of Trustees.

6. The meeting shall also appoint one or more fit and proper person or persons to act as Reeves in said School District, and who shall act until the next Annual School Meeting, or until a successor or successors are appointed.

7. The Secretary of said meeting, if not the Secretary of the Board of Trustees, shall, within ten days after such meeting, deliver to the Secretary of the School Trustees the Minutes of the said meeting, or a copy thereof, signed by himself and countersigned by the Chairman of said meeting; and in case there is no Secretary of said Board of Trustees, then the Secretary of said meeting is to keep the custody of them until a Secretary of said Board shall have been appointed.

8. The Secretary of the Board of School Trustees shall, immediately on the receipt of such Minutes, or if he himself shall have been Secretary of said meeting, enter the regulations and resolutions of such meeting and the names of Reeves as contained in said Minutes, in a book to be kept for that purpose, which shall be open for inspection on any reasonable request of any rate-payer in the said or adjoining School Districts.

9. The Secretary of School Trustees shall also furnish to each Reeve a copy of the regulations and decisions of the meeting, or the regulations and decisions

of any former school meeting then in force respecting Domestic Animals, together with the name or names of Reeve or Reeves appointed for such School District, and a copy of this Act, which shall be furnished to him by the Provincial Secretary of this Province.

10. It shall be the duty of such Reeve first appointed immediately on the receipt of notice of his appointment, and that he has been appointed, to post on the Schoolhouse of the District in which he has been appointed, and also on the Schoolhouses of two of the adjoining Districts, a copy of the regulations and decisions in force respecting Domestic Animals in the District for which he has been appointed Reeve.

11. It shall be the duty of such Reeve or Reeves to seize and take up all such Horses, Cattle, Sheep, Pigs and Geese, going at large contrary to the regulations and decisions of the aforesaid meeting, within any School District to which he shall have been appointed beyond the enclosure of the owner or owners thereof.

12. Any person so appointed Reeve within any such District as aforesaid and who shall neglect or refuse to perform the duty of his office, by not taking up all animals going at large as aforesaid within such School District, or in not disposing of the same in the manner hereinafter prescribed, shall forfeit and pay for every such refusal or neglect the sum of Three Dollars, to be recovered before any one or more of Her Majesty's Justices of the Peace for the County wherein such District shall be situate, together with the costs of suit, and to be levied in default of payment by Warrant of Distress on the goods and chattels of such Reeve one-half of the said fine to be paid into the Treasury of this Island for the use of Her Majesty's Government, and the other moiety to the person who shall prosecute such Reeve: provided that no person appointed Reeve as aforesaid shall be liable to serve as such more than once in every three years.

13. All persons in any way or manner obstructing any such Reeve in the execution of his duty, shall forfeit and pay a sum not exceeding Five Dollars, or less than One Dollar, with costs; such fine and costs to be recovered on the oath of such Reeve, or one or more credible witness or witnesses, and in manner last aforesaid; and in the event of such person so adjudged guilty of obstructing as aforesaid not having goods or chattels whereon to levy the said fine and costs, then the said Justice of the Peace is hereby authorized and empowered to commit the said person or persons to the Jail of the County wherein the Judgment shall have been allowed, for a period not exceeding ten days.

14. It shall be lawful for such Reeve to sell or cause to be sold at Public Auction, all animals so seized and taken up as aforesaid, ten clear days' notice being previously given by written notice in the form of Schedule B. hereto annexed, to be posted up in three of the best public places in any such District, and also on the two Schoolhouses nearest to the Schoolhouse of such District, such notice shall contain a true and accurate description of the animal or animals, and shall make suitable provision for the safe keeping and sustenance of such animal or animals until the day of sale.

15. Provided always that the owner or owners of such animal or animals so taken up shall be entitled to have the same returned to him or them if claimed before the sale takes place, on tendering to such Reeve as shall have taken up the same, the sum of Two Dollars per head for Stallions, Rams, Bulls, and Boars, and for all other animals so taken up, the sum of Fifty Cents per head, with expenses of keep; and the proceeds of such sale or sales, or the sum to be paid by the owner or owners, shall, after paying the expenses of seizure and sale (if any) be paid to the owner or owners of such animal or animals; but if the balance of the proceeds of such sale shall not be claimed within six months from the day of sale, the said Reeve shall pay the money arising from such sale, less all expenses as aforesaid, into the Treasury of this Island for the use of Her Majesty's Government.

16. The person or persons claiming to be the owner or owners of such animal or animals so sold claiming to be entitled to the balance of the proceeds of sale, shall prove on oath before a Justice of the Peace, in Form C. annexed to this Act, his or their right thereto.

17. The Reeve or Reeves shall, immediately after the sale of any animal as aforesaid, pay the proceeds after deducting the charges per head as provided in the fifteenth section of this Act, and the expenses incurred by the seizure and sale thereof, to the Secretary of the Board of School Trustees, who shall keep the same for twelve months, unless previously claimed by the owner as aforesaid, and if not claimed he shall, after said twelve months shall have elapsed without being claimed, pay the same into the Treasury of this Island.

18. When a vacancy shall occur in the office of Reeve by death or otherwise, the same shall be the duty of the Trustees of such School District to immediately fill such vacancy by appointing a suitable person, who shall be entitled to receive from the Secretary of the Board of School Trustees a copy of the regulations and provisions in force in such District.

19. The fees and allowances to be paid under this Act shall be as follows: To Justice for affidavit of owner, twenty cents; to Reeve for keep of Horses per head, per day, forty cents; for keep of Cattle per head, per day, twenty cents; for keep of Sheep per head, per day, five cents; for keep of Swine per head, per day, ten cents; for keep of Geese per head, per day, three cents: to Constable or Bailiff for levying execution and sale and serving summonses, the same as are allowed for similar services on processes issuing out of the County Courts of this Island; to the Justices, the same fees as are allowed to Clerks of said Courts.

20. The words "Annual Meeting" in this Act, shall be construed to mean the Annual or General School Meeting of such School District.

21. All Acts and parts of Acts of the General Assembly of this Island, repugnant to or inconsistent with the provisions of this Act, shall be and the same are hereby respectively repealed.

FORM OF SCHEDULE A.

Being postscript to School Notice.

Immediately after the close of the Meeting, the resident householders will arrange themselves into a meeting for the purpose of regulating the running at large of Domestic Animals, and appointing Reeves, according to the provisions of the Domestic Animals' Act, 1878.

A. B.,
C. D., } Trustees.
E. F., }

FORM OF SCHEDULE B.

Being Form of Notice of Sale.

I hereby give notice that I will sell at Public Auction on the _____ day of _____ at the hour of _____ at (here mention the place of sale and description of Animals) found running at large in _____ School District.
A. B., Reeve.

FORM OF SCHEDULE C.

Being oath taken by person claiming balance of proceeds of sale.

I _____ do swear that the _____ taken up by _____ who is a Reeve for the School District of _____ is my property, and that I am entitled to the balance of the proceeds arising from the sale thereof. So help me God.
Sworn at _____ this _____ day of _____ A. D. 18 _____ before me _____ J. P. for _____ County.

The admission of women to the classes of the Faculties of Arts and Laws at University College, on the footing of regular students, was so well prepared for by ten sessions of work with the London Ladies' Educational Association that no

practical difficulties have arisen. During the first term, from October to Christmas, the number of women in regular attendance on the College classes was 225. Of these 72 were in the Fine-Art School, which has been open to women since its first establishment. The remaining 153 were in attendance upon classes of which some are open to women only, and some are mixed. As a general rule, mixed classes are confined to subjects attended by the more advanced students, but the arrangements are based more on experience than theory, and have thus far answered perfectly. The women have a Common-Room of their own, for use between lectures, and are entering quietly and unaffectedly into College life. They are already establishing among themselves a College Debating Society. In the mixed classes there is no more difficulty found in fellowship of study among men and women than at lectures of the Royal or the London Institution; and the whole system is so simply accepted that the fear of a failure in readiness to translate aloud or answer questions, among the members of mixed classes, has proved groundless. But there can be no doubt that the maintenance of classes to which only men or only women are admitted will have to remain part of the system. In some cases a mixed class would be too large; in other cases a separate class meets a particular demand. The whole arrangement, in fact, must always be the result of a continued watchfulness for adaptation of each part of the scheme to the proved wants of all who seek liberal education.

ARTISTS ON AGRICULTURE.

YEAR after year a public palace in Piccadilly opens its galleries, and bids all England to enter, and see for themselves what men, trained to observe and to represent what they have conceived or witnessed, have to tell of human life. For, after all, it is as they affect human life that even cloud or sea or landscapes interest; it is for their effect upon the human moods that light and shadow are depicted. Amongst those who enter this place every spring—to be pleased or instructed by having their own views enlarged—are of course some of the occupiers of land and of those engaged in husbandry, i. e., those who follow the oldest, the most necessary—one might have supposed the most inspiring of human pursuits. These through the rooms with the rest. What lesson, or enlightenment, has the artist of the day for farmers? Must English Art admit not only that she has a leaning for luxury, but that she cares to study and show forth only what is luxurious and gorgeous?

Now it is a wholesome characteristic of modern English, as against modern continental, picture galleries, that in the former an honest study of Nature, amid all the changes of wind and weather, is everywhere displayed. The Academy exhibition at Burlington House in 1881 is no exception. Of landscape and sea studies of every kind, stern and soft, there is enough and to spare. To spare, because mere prettiness, and scenery which suggests idleness, are somewhat over numerous. Of course, if Royal Academicians—whether members, associates, or mere tolerated exhibitors—deem these to be main attractions to visitors and purchasers, they have as good a right to find ample space for them as they have to paint them. But the agriculturist, out for the day, and reverently anxious to see what Art has to say to him, is apt to pass the superfluity over with a "Pish," because the land and calling, "Where it is always Afternoon," are most certainly not his. Never, since the first husbandman turned the first clod by aid of animal power, and made preparation in summer for the winter which he knew had to follow, was the husbandman's position more full of anxiety than it is now. Nor has the husbandman's mind ever been more keenly sensitive to aid or insult from its professed teachers. Now the Royal Academy is nothing unless it be a teacher; and the art of 1881, to the husbandman at all events, is an insult rather than an aid. No doubt there are pictures this season able to charm everyone, as critique after critique in the daily papers has already abundantly announced; and the farmer, like his town-bred cousins, examines these with grateful interest, and finds advantage in all that is in itself true and good work. But why should pictures of real husbandry be so conspicuously absent? There is hardly a real farm picture in all the rooms.

Mr. Peter Graham's magnificent landscapes—as No. 55—show Highland cattle, but these seem as if they were there by accident, and to be rapidly on the move out of the scene. Mr. H. W. B. Davis, a painter whose defection from English farm life is a wrong to every English farmer, paints glorious pictures; but his cattle (as No. 263, which really speak and suggest) are of no breed known to the shires, nor such as touch any English grazer's heart. Such pictures as "Milk for the Calves" (No. 20) are what the painter of No. 6 calls his picture—"Impotent Cack,le"—for man, as well as geese, can stretch out neck and quill to touch at subjects which they see, and for which they challenge attention, although they cannot understand.

Why cannot some painter see among his countrymen, engaged winter and

summer in facing the elements on land, something of what Mr. John Collier saw and painted in No. 269. This is a picture of some noble weather-beaten seamen turned adrift to face death upon a barren sea and in an empty boat. If "George Elliot" could find, in Loamshire, peasants tragely and comely enough to set half the readers of English-written books crying or laughing, why cannot some one professed artist put before the eye the grander or even the more mirth-provoking side of tillage in English country life? The most distinct attempt to realise peasants in action is No. 420, "The Copse on Furze-field Brow;" yet this is "all wrong." The children bringing daddy his breakfast may be right enough, but no farmer can tell what those horses have been doing since daybreak, nor what they and the driver have done to earn a meal. To say, as some do, "peasant life in England is colourless and void of interest" is simply to contradict all the writers from Shakespeare to the noble intellect newly incapacitated for fresh effort. These have found plenty to interest them. Charles Kingsley once, writing of his Devonshire rusties, said, "And what fine gentlemen some of the old fellows are! how simple and grand their ways! Can no one else, brush in hand, see this, or show us some of the men, or else some veteran dairy-woman, with snow-white linen, looking on upon the day's work done, and saying, as she looks on the result of the churning—as the writer once heard one say at eighty years of age, whose quiet self-respecting and respectful manner would have equalled that of any of the visitors to the Academy—"Ah, next to seeing the sun rise, there is nothing I like to see so much as that!" How many town lives of four-score leave at the end the mind thus fresh and wholesome?—fresh enough to quicken with new energy to meet cheerfully another day, although that is certain to be one of toil, and wholesome enough to feel its pulses glow with satisfaction at the completion of a laborious task, the success of which entirely depends upon constant observance of cleanliness and regularity in applying skilful labour?

It is somewhat humiliating to English farmers to see how many pictures there are of daintily-attired ladies, accompanied by dogs whose silken coats tell of paid attendants, whilst there is not even one of such a companion as Burns' "Honest Luath," nor of women painted in the decent costume which lends itself to a life of labour. Can the artist of the day see nothing in England worth painting, except the milliner and the kennelman have first taxed their knowledge to get up sitters? Of foxhounds and Roman amphitheatres there are theatrical

representations enough. And, in "Sleeping Dogs Lie," No. 402, Mr. B. Riviere gives a powerful representation of a navy in drunken slumber, with white bulldog (torn in many a fray) d on the lap of the prostrate figure. There is a bitter but truth here to the life of some men and some dogs; but whether English peasant life could not have been depicted as effective a picture which should also be more wholesome may be questioned. One is disposed not merely to "let sleeping dogs lie," as one sees picture, but also to keep the wind out of the unsavory group.

Possibly those who love country and have sympathies and knowledge rather wilder than these islands alone furnish, will find more pleasure in Italian pictures than in any English Scotch, or Irish representation of peasants and their pursuits. In No. 95 Mr. Beavis gives, with great spirit, a picture of "Herdsman of the Campagna coloring Young Horses." It is not a good picture, nor is the occupation full of honest suggestion, but it has life and truthfulness. But No. 71, Gael Chierici, has these and a good deal besides. This same painter had last year a felicitous representation of an Italian making its first desperate venture to cross the hut upon its own feet. This year he, as it seems to us, has the best of all the pictures of the season in its fidelity to the facts of hard-working existence. Only an artist of genuine fire could have got so good a picture out of such commonplace material. Is not that genius? To take what everybody has and can do, and to make it tell quite a new story. Colour, handling and moral, seem alike sound in No. 71. Some owners of a mere country hut ("a lodge in a gar of cucumbers") has left it with the door open, whilst a 2-year old boy gets meal out of a coarse earthen bowl. He waddles the geese, ducks, hens, chickens, cat, &c. The hens fly upon the chairs and dresser, and help themselves to the homely food. This is terrible enough to the youngster; but the ducks are gabbling and the geese come v outstretched necks and hissing serpents heads, into terrible proximity. He slips the bowl; up goes the hand which grasped the spoon; and the poor boy yells "murder!" The picture is entitled "A Frightful State of Things," as indeed it is. But the accuracy of every detail the main cause of the delight it certainly inspires. These are the real poultry of the Mediterranean coast. Not so variously grouped in order to pander to fashionable fancies; but the yell-legged, big-combed, precocious birds which, in Italy, are in every cabin and everybody's way, except where they are to be eaten or sold. There is not

in "I exaggeration nor mock refinement about r. Brit the picture; but it is an honest, simple sentati presentation, by hard work, of what whilst ill stations may see. Yet the colour is y) desso managed as to be charming, and the . The whole story is told with pleasant humour. e life the thought must occur, Do Italian pea-whethomts keep the "wolf from the door" by nave suphe help of all these allies—all these h shouldutilizers of what English folk waste? be qu(Ins poor little rustic's parents had turnerely teys, geese, ducks and hens to help to sees thand them a living! Possibly English vind-sid agriculture would not be roaring quite so uch in the temper of that frightened ntry life Italian beggar-brat if English agriculture rowled surrounded their homesteads with as lone ca umercus an array of producers of what in to very English townsman wants to buy. English his Signor Chicici is an Italian Crabbe peasant "Nature's sternest painter, y't her ; Mr. h est," and his the truest "farm picture" a collec the exhibition.—*Agricultural Gazette.*

THE ART OF BUTTER-MAKING.

Dr. Voelcker delivered a series of four lectures, or addresses, on the "Principles of Butter-making," in the working dairy erected in the "Royal" showyard at Derby. His remarks were to a great extent varied on each of the four afternoons, and we now give, in a more complete form than has yet been published, the substance of the discourses.]

It has been announced that I am to deliver a lecture on butter-making on each day of the show. I do not, however, propose to ch eobn at anything so pretentious, but rather to content myself with some simple and practical hints on the subject. As you are aware, can s large quantities of butter are annually imported into England from foreign countries. seem e obtain excellent butter from Holstein, wyner com Denmark, and also from America. Now a gard has frequently struck me that there is no the de necessity for importing large supplies from gets antant lands, when we have such excellent hickets abilities for producing good butter at home th comparatively little trouble. The ques- hicket will very naturally be asked—How is it e tal that so much butter is imported into England nselshen we can make it cheaper and avoid the rrrifyense of importation? My answer is extremely simple, and it is this—foreigners ve dueake better butter than we do, notwithstanding the natural advantages we possess of serpning out good butter, of selling it fresh, and obtaining a good price for it.

Before speaking of the circumstances which or uil butter-making in this country, it is entu desirable that I should give you some explanations ind of the composition of milk. Milk, then, deta a perfect food in a concentrated form, and certain nains everything necessary for the sustenance of young animals; and here I would ultry mark that no more serious mistake can be t seade than to withhold this most natural food ndet in the young, especially as it contains all yoll e elements necessary for bone-making. s h eam consists of a certain proportion of n an ter and fatty matters, and a small proportion of casein. It would, of course, be much the lter for the purpose of the butter-maker if neit latter element were absent; and if that

were the case, the principal part of the difficulties in the way of butter-making would be at once overcome, because it is due to the rapidity with which casein turns sour that butter obtains the rancid taste which we sometimes detect. It by any means we could separate the fatty matter from this casein or curd matter, we should get excellent butter. It is this curd matter which causes all the difficulty, as I have just intimated; and it is on this account that I believe dairy farmers will never obtain the first quality butter from whole milk, certainly not the same quality as that which is obtainable from cream. The composition of cream varies greatly, and the same remark applies to the fatty matters of which it is constituted. This circumstance I attribute in a very large degree to the feeding of the cows. Nobody, for instance, can feel any astonishment that when cows are fed upon turnips, swedes, and mangles, there is a more or less disagreeable flavour in the butter made from the cream produced from the milk of these cows. In my opinion, the best-flavoured butter is made from the milk of cows fed, not upon rich pasture, but upon what is generally considered poor pasture; that is to say, pasture with scanty herbage, such as that to be found upon the hilly land which abounds in this country. By rich pastures I mean pastures which produce a large bulk of grass, but which are not composed of a great variety of herbage. The richer the quality of the cream the richer will be the quality of the butter made from it.

It has been said, with a good deal of truth, that by over-maturing pasture land we reduce the fine quality of the butter made from the milk of cows fed upon such pasture. My belief is that the finest quality of butter is produced from pasture which contains a great variety of herbs, some of which might even be ranked as weeds. The question is, Can ordinary pasture produce first quality butter? and to that question I answer, "Decidedly, if you take proper precautions to prevent the cream turning sour before it is churned." This sourness, let me repeat, is the great hindrance in making high class butter. Many persons deem this a small matter, and unconsciously allow the cream to get somewhat sour before making butter; but if you desire to produce good, sweet, keeping butter, you must churn cream as sweet as possible. This you will be inclined to say, is an extremely simple matter; and I am almost ashamed to speak of such simple matters in the presence of so many experienced persons; but my experience is that simple things are the most difficult to make people learn. With most of us there is a peculiar tendency to aim after some big thing and to neglect the little thing, notwithstanding that it is on the latter that so much of our daily comfort depends.

It may appear to be a matter of little moment to prevent cream getting sour; but when we remember the enjoyment of tasting first quality butter, as against the feeling experienced in having to eat rancid and ill-flavoured butter, it does not seem so small a matter. But how are you to prevent cream getting sour? In the first place, you must carefully look after all the people employed in and about the dairy to see that they always have the importance of cleanliness before their eyes; and above all see that those who milk the cows do so with clean hands. Secondly, you should be sure that

the cows are perfectly "stripped," because if this is not done it is the means of sowing the germs of rancidity. Then, when the milk is drawn from the cow, it ought to be cooled down directly to about 55°, so as to take what is called the animal heat from it.

As to the question of shallow or deep pans for "setting" for cream, I am an advocate for the use of deep ones. After being filled with milk, these pans should be placed in a vessel containing water—ordinary pump water answers well—for twelve hours; or, if the milk is extra warm a little ice may be used, and this would result in a large proportion of cream arising. In order to prevent rancidity, it is very important that the cream should be churned at once. In small dairies, however, this is impracticable, and in such cases every endeavour should be made to prevent the casein from turning. And here let me say, do not churn too quickly. Do not be in too great a hurry and turn irregularly, because if you do failure will almost certainly result. Turn steadily, at about forty-five or fifty revolutions per minute. As soon as butter comes—and this you can tell by the noise—it is time to stop the churn and deal with the butter kernels. Strain off the buttermilk, put some cold water into the churn, and turn it again two or three times; this will have the effect of washing the butter. Perhaps the best way is to incorporate the smallest quantity of salt, or salt water, into the churn, so as to distribute the salt evenly amongst the butter. I do not recommend too frequent washing, as this only results in the butter losing that fine natural flavor which it should possess. After each process of butter-making, the churn and other utensils should be cleaned with boiling-hot water. In butter-making everything depends upon scrupulous cleanliness, the use of plenty of hot water, or steam if it is available, followed by cold water.

Some years ago I gave a lecture on cheese-making to a number of farmers' wives and dairywomen on the estates of the late Lord Fitzhardinge. At the close of my remarks I invited discussion, and after a little while a lady got up and said, "Well, doctor, what you have to tell us is all very well, but can you make cheese?" "Yes, I think I can," I answered; "but at any rate I will try if I have a fair chance, and see the thing done from beginning to end. The produce of a great many cheese dairies is spoilt by the cows being milked with dirty hands, and so forth." "Very well," said she, "if you will come I will send for you." I was then residing in the neighbourhood. A date was agreed upon, and at half-past 5 on a cold morning she sent her trap, and I drove five miles to see the cows milked. When the rennet was about to be put in I asked her whether the temperature was right. So she dipped in her hands, and said, "Yes, I think that will do." On inserting the thermometer, however, I found it was just 10° lower than it ought to be. At this, her husband, a snock-frocked farmer, who was standing by, said, "Ah! Sally, I tell you you have spoilt many a cheese for me by feeling the milk with your hands instead of testing it with the instrument." Well, at last a large cheese was made and marked, and when sold it fetched more money than she had been in the habit of getting. After this nearly all the farmers in the neighbourhood presented their wives with a thermometer apiece.

One of the first necessities in the making of good butter is to have at command an abundance of cold water—spring water if possible, or pump water so as to get rid of the animal heat as soon as the milk comes from the cow. By this means, also, you get rid of the animal flavour. Whenever you have the means of setting milk for cream I strongly advise you to do so. If you take care to keep cream as closely as possible to a temperature of 55° to 57° F. you will not only get a larger produce of butter, but also butter of a greater flavour. By using deep pans, and in hot weather putting a lump or two of ice in the vessel of water in which the pans are placed to preserve the temperature below 58°, I am ready to guarantee that cream will keep without turning sour for a period of at least eighteen hours. Butter should always be made from perfectly sweet cream.

In the art of butter-making chemistry is not required. It is a simple mechanical operation. Some people are of opinion that a certain degree of sourness in cream is necessary in order to obtain good butter. My experience has taught me differently, and I believe it is impossible to attack in too forcible a manner the opinions of old-fashioned dairy people. I denounce the sour cream theory as radically wrong. There is an opinion that the longer cream continues cold the worse it becomes. There is a good deal of wrong experience, but I like to have the right experience. Sometimes a novelty, if carefully investigated, proves to be far more useful when thoroughly worked out and practically tested than the experience of a man who has been going on in his own way for twenty years. A great many such men maintain at the present time that the best quality of butter can only be made if cream is allowed to turn a little sour. This is a great mistake. The sweeter the cream the better the butter will turn out, other circumstances being equal.

After alluding in terms of praise to the cream separator, Dr. Voelcker proceeded to say that milk is a mechanical mixture, not a chemical compound of fatty matter as cream, curd, or milk and sugar. It is, he said, well to remember this, because it is not by chemical means that we separate cream from skim milk, but purely by mechanical means. The cream globules rise to the surface, and, by proper management, the cream is passed away from the skim milk. In this way we obtain the cream perfectly sweet, and, provided the food given to the cows is of such a nature as to produce sweet and not "furnippy" cream, we can obtain excellent butter by churning it properly. Although my profession is that of a chemist, I would impress upon you that the less chemical you use, or the less you attempt to meddle with chemical agencies in the separation of butter from the cream, the better will be the result. If you pour off the buttermilk as soon as the butter comes you will have butter much more free from the cheesy or curdy envelope which originally encased it in the creamy globule. And you will never make first-rate butter unless you preserve a regular temperature in churning. The temperature should never rise above 60°, it should be rather below than otherwise. I am no advocate of all these beautiful air churns, and complicated contrivances. You do not want them. In a good churn you simply require an implement which enables you to churn sufficiently with-

out overloing it. All churns should be so constructed as to be easily cleaned. The requisites for successful buttermaking are, a well-constructed dairy, not subject to great fluctuations of temperature; a dry floor, perfect cleanliness, appliances for introducing hot or cold water, or steam; and, in the last place washing it moderately, and salting it in the churn; if you want to make first rate, firm, fresh butter, there is no secret, no great chemical skill is required; only ordinary attention to a few simple principles, and by observing them I warrant that you obtain for your butter a better price. Instead of having to sell it at 10d. or 1s. per lb., I hope in the future you will get from 1s. 6d. to 2s. I sincerely hope that in these times of depression the English dairy farmer will derive some advantage, and stop to some extent the large supply of foreign butter which, I am sorry to say, frequently drives the English butter out of the market.—*Agricultural Gazette.*

IN the County of Sutherland there are only 85 owners of land from an acre upwards; of owners of 100 acres and upwards there are 23. There are only three proprietors who draw over £8000 a year from land in the County. These latter three are the Duke of Sutherland who owns considerably over a million of acres, the annual value of which is nearly £300,000; Mr. Sutherland Walker of Skibo, who owns twenty thousand acres, and draws £16,000; and Sir James Matheson who owns eighteen thousand, annual value £1,800. The Norse Teutons who, prior to the twelfth century, had settled in Caithness, and frequently plundered farther south, gave the name of Sutherland to the County, as it formed the southern limit of their possessions. Excepting Caithness, it is the most northern county in the mainland of Scotland. Whilst the Duke owns more than nine-tenths of the County he is also an extensive owner in other parts of Britain, owning by several times the largest landed property in the United Kingdom. The chief seat of the family, Dunrobin Castle, is the most magnificent of all the many mansions in Scotland, and part of it is said to be the oldest inhabited house in Britain. The County is so wild and sterile that barely one twenty-fifth part is capable of cultivation of any kind, so that its wealth and reputation depend upon sheep-farming. Up to the beginning of this century the county was locked up by water and mountain, but the present Duke, by contributions to railways to the extent of a million and a half of dollars, has rendered it now of easy access. In building the line from Golspie to Helmsdale the Duke acted as his own contractor, carrying on the work under his own personal supervision.

THE FRUIT GARDEN.—The old strawberry beds should be kept clean of weeds, removing all runners not needed for new plants. New beds may be set this month, but there is very little gained in point of time over spring plant-

ing unless "potted plants" are used. They are plants from runners which have struck in pots of earth, set under them; by rearing the earth with the plant there is no checking of growth, and a fair crop of fruit may be expected the following summer. There is gain in setting ordinary strawberry plants in fall in that the soil is in better condition, that the garden and other work is not so pressing. Blackberries and raspberries start early in the spring, and should be planted in fall. If it is desired to propagate the black caps, and a few varieties of the red, the earth must be bent down, and earth placed on the tips, which then will soon strike root. A red raspberries and blackberries may be propagated readily from "suckers," or shoots which spring from below ground. The currants and gooseberries may be pruned as soon as leaves are ready to fall. Propagation is done by cuttings planted in rows with one bud above surface. If put in early, they will form roots before winter sets in. The gathering of grapes is an important operation, and is best done with the scissors made for the purpose this avoids handling the fruit, which, by moving the "bl-om," injures the appearance and therefore the sale.

TAKING CARE OF HARNESS.—A harness that has been on a horse's back several hours hot or rainy weather becomes wet; if not properly cleaned, the damage to the leather is irreparable. If, after being taken from the horse in this condition, it is hung up in a careless manner, traces and reins twisted into knots, and saddle and bridle hung askew, the leather which dried retains the shape given it when wet, and when forced into its original form damage is done to the stitching and the leather. The first point to be observed is to keep the leather soft and pliable. This can be done only by keeping it well churged with oil and grease; water is a destroyer of these, but mud and the salty moisture from the animal are even more destructive. Mud, in drying, absorbs the grease and opens the pores of the leather, making it a prey to water, while the salty character of the perspiration from the animal injures the leather stitching and mountings. It therefore follows that, to preserve a harness, the straps should be washed and oiled, whenever it has been moistened by sweat or soiled by mud. If a harness thoroughly cleaned twice a year, and when used duly exposed treated as we have recommended the leather will retain its softness and strength for many years.—*Boston Journal of Chemistry.*

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SHORT HORN DURHAM BULLS.

1 Lobo Lad,	<i>Jour. Ag.</i> (May 1880), Vol. IV, p. 3
2 Yeoman,	do. do.
3 Sir William,	do. do.
4 Gato,	do. do.
5 Nobleman,	do. do.
6 Otton,	do. do.
7 Bell Duke Markham	do. do.
8 Roland,	do. do.
9 Duke of Cardwell,	do. do.
10 Sir Halbert,	do. do.
11 Grand Duke Remus	do. do.
12 Ontario Farmer,	do. do. Vol. IV, p. 3
13 Sir William,	do. do.
14 Baron Lightburne 2d	do. do.
15 Viscount Oxford,	do. do.
16 Gwynne of the Forest	do. do.
17 Kent Gwynne,	do. do.
18 Skiddaw,	do. do.
19 Captain Cawood,	do. do.
20 Fifth Duke of Lorne,	do. do.
21 Lord of Braemar,	do. do. Vol. IV, p. 3
22 Wetherby Star,	do. do.
23 Kingston,	do. do.
24 Morisco,	do. do.
25 Lord Windsor,	do. do.
26 Favorite,	do. do.
27 St. Nicholas of Lucyfield,	do. (July 1883), Vol. IV, p. 4
28 King Dodds,	do. do.
29 Colchester King,	do. do.

Table listing various breeds and owners, including entries like '30 Alfonso, Jour. Ag., (July, 1880), Vol. IV. p. 49' and '31 Snowdon 2nd, do. do. do.'.

SHORT HORN COWS AND HEIFERS.

Table listing Short Horn Cows and Heifers, including entries like '1 Beauty, Jour. Ag. (July 1880), Vol. IV. p. 51' and '2 Coward's Rose, do. do. do.'.

Table listing various breeds and owners, including entries like '2 Lady Mary, Jour. Ag., (July, 1880), Vol. IV. p. 32' and '13 Nellie York, do. do. do.'.

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Table listing Ayrshire Bulls, including entries like '1 Bruce, Jour. Ag. (June 1880), Vol. IV. p. 44' and '2 Boulardie, do. do. do.'.

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Table listing Ayrshire Cows and Heifers, including entries like '1 Miss Cuthbert, Jour. Ag. (June 1880), Vol. IV. p. 44' and '2 Josephine, do. do. do.'.

36 Lady Mary,	<i>Jour. Ag.</i> , (Oct., 1880),	Vol. IV, p. 75
37 Braw Lass,	do	do
38 Gysey,	do	do
39 Juliet,	do	do
40 Ruth,	do	do
41 Nora,	do	do
42 Minnie,	do	do
43 Zulu,	do	do
44 Heiress,	do	do
45 Island Lass,	do	do
46 Buttercup,	do	do
47 Lady Clements,	do	do
48 May Queen,	do	do
49 Flora,	do	do
50 Hebe,	do	do
51 Lady Halifax,	do	do
52 Evangeline,	do	do
53 Blossom,	do	do
54 Marie Bismarck,	do	do
55 Alice Gray,	do	do
56 Carissa,	do	do
57 Princess Alice,	do	Vol. IV, p. 77
58 Ophelia,	do	do
59 Octavia,	do	do
60 Juliet,	do	do
61 Cleopatra,	do	(Oct. 1880), Vol. IV, p. 77
62 Primrose,	do	do
63 Rebecca,	do	(Oct. 1870), Vol. IV, p. 77
64 Little Durrin,	do	do
65 Queen of Ayr,	do	do
66 Stella,	do	do
67 Dolly Varden,	do	do
68 Polly Perkins,	do	do
69 Rose,	do	do
70 Lady Franthe,	do	do
71 Bessie,	do	do
72 Fort,	do	do
73 Fairfeld Beauty,	do	do
74 Miss Cecilia,	do	(Oct. 1880), Vol. IV, p. 77
75 Miss Ida,	do	do
76 Primrose,	do	do
77 Daisy,	do	do
78 Myra,	do	do
79 Daisy the Second,	do	do
80 Cherry,	do	do
81 Flora,	do	Vol. IV, p. 77
82 Maid of Fern Hill,	do	do
83 Hortense,	do	do
84 Flora,	do	do
85 Mary Gray,	do	do
86 Alice Gray,	do	do
87 Hortense,	do	do
88 Lady Fairie,	do	do
89 Beauty,	do	do
90 Lady Ballindalloch,	do	do
91 Belle of Bellahill,	do	do
92 Rose of Bellahill,	do	do
93 The Sun,	do	do
94 Olive,	do	do
95 Spotted Lady,	do	do
96 Rosebud,	do	do
97 Dairy Duchess,	do	do
98 Dairy Duchess,	do	do
99 Gysey 9th,	do	do
100 Shifty of Staustead,	do	do
101 Belle of Brookside,	do	do
102 Mayflower,	do	Vol. IV, p. 79
103 Lady Windsor,	do	do
104 Lilydale,	do	do
105 Minerva,	do	(June, 1881), Vol. IV, p. 145
106 Gatoxy,	do	do
107 Molly,	do	do
108 The Abess,	do	do
109 Louise,	do	Vol. IV, p. 146
110 Maple Leaf,	do	do
111 Edie 2nd,	do	do
112 Belle 3rd,	do	do
113 Flora Baker,	do	do
114 Nellie,	do	do
115 Lady Blanche,	do	do
116 Lily 2nd,	do	do
117 Lily 5th,	do	do
118 Lily 6th,	do	do

JERSEY BULLS.

1 Pioneer,	<i>Jour. Ag.</i> (July 1880),	Vol. IV, p. 54
2 Dick Swifeller 3rd,	do	do
3 Bravo,	do	do
4 Pat Tyler,	do	do
5 T. ter,	do	do
6 Yarmouth,	do	do
7 Darting,	do	do
8 Plantagenet,	do	do
9 Prince of Lee Farm,	do	do
10 Knight of Lee Farm,	do	Vol. IV, p. 55
11 Azunbar,	do	do
12 Britizan,	do	do
13 Bon Hampton of Hillcrest,	do	do
14 Bilaptau,	do	do
15 The Sultan,	do	(Aug. 1880), Vol. IV, p. 61
16 Prince Imperial,	do	do
17 Ajax of Lornedale,	do	do
18 Lord Sealfield,	do	(Oct. 1880), Vol. IV, p. 31
19 Round Robin,	do	do
20 Gambetta French,	do	do
21 Eloper,	do	do
22 Comet 2nd,	do	do
23 Comet 3rd,	do	do
24 Bellerophon,	do	do
25 Eloper 2nd,	do	do

20 Lorna,	<i>Jour. Ag.</i> (Oct., 1880),	Vol. IV, p. 81
27 L'Etouger,	do	do
23 Prince of Springfield,	do	do
29 Springfield Boy,	do	do
30 Antelope,	(Sep., 1881),	Vol. IV, p. 160
31 Abdurrahman,	do	do
32 Louis Debonnaire,	do	do
33 Romeo Debonnaire,	do	do

JERSEY COWS AND HEIFERS.

1 Brunitza,	<i>Jour. Ag.</i> (July 1880),	Vol. IV, p. 55
2 Nabritza,	do	do
3 Golden Doublet of Hillcrest,	do	do
4 Zabrita,	do	(Aug. 1880), Vol. IV, p. 61
5 Oriole of Hillcrest,	do	do
6 Maid of Orleans,	do	do
7 Mermaid of St. Lambert,	do	do
8 Cowslip of St. Lambert,	do	do
9 Sultan,	do	do
10 Little Buttercup,	do	do
11 Scallow Belle,	do	(Oct. 1880), Vol. IV, p. 81
12 Heather Belle,	do	do
13 Belatrix,	do	do
14 Damsel,	do	do
15 Florie,	do	Vol. IV, p. 82
16 Lady Bonair,	do	do
17 Bel Aer,	do	do
18 Zaida of Lornedale,	do	(Oct. 1880), Vol. IV, p. 82
19 Lady Sealfield,	do	do
20 Gazelle of Brooklyn,	do	do
21 Jersey Queen,	do	do
22 Nathalie,	do	do
23 Gysey Queen,	do	do
24 Janet 2nd,	(Sept., 1881),	Vol. IV, p. 160
25 Langa Debonnaire,	do	do
26 Hether Belle, 2nd,	do	do
27 Nelly,	do	do

DEVON COWS AND HEIFERS.

1 Primrose,	<i>Jour. Ag.</i> (Sept 1880),	Vol. IV, p. 65
2 Lady Pink,	do	do
3 Maid of Miller Hill,	do	do
4 Margaret,	do	do
5 Blossom,	do	do
6 Violet,	do	Vol. IV, p. 66
7 Buttercup,	do	do
8 Maymower,	do	do
9 Lily,	do	do
10 Veibena,	do	do
11 Ivy Giant,	do	do
12 Orange,	do	do
13 Kalmia,	do	do
14 Snowdrop,	do	do
15 Pansy,	do	do
16 Myrtle,	do	do
17 Marigold,	do	(Sept. 1880), Vol. IV, p. 66
18 Poppy,	do	do
19 Moss Rose,	do	do
20 Larkspur,	do	do
21 Carnation,	do	do
22 Heartsease,	do	do
23 Duchess of Elinb'h,	do	Vol. IV, p. 67
24 Princess Victoria Adelaide,	do	do
25 Princess Alice,	do	do
26 Hawthorn,	do	do
27 May,	do	do
28 Penny,	do	do
29 Azalea,	do	do
30 Princess Beatrice,	do	do
31 Dahlia,	do	do
32 Princess Helena,	do	do
33 Cowslip,	do	do
34 Balsam,	do	do
35 Trillium,	do	do
36 Princess Louise,	do	do
37 Acacia,	do	do
38 Camelia,	do	do
39 Princess Victoria 3rd,	do	do
40 Lady Barbara,	do	do
41 Princess Alexandra,	do	Vol. IV, p. 68
42 Foxglove 2nd,	do	do

DEVON BULLS.

1 Prince Ale'r,	<i>Jour. Ag.</i> (Sept. 1880),	Vol. IV, p. 63
2 Sir Charles Napier,	do	do
3 Curly Prince,	do	do
4 Sir F. Williams,	do	do
5 General Wolfe,	do	do
6 Lord Chelmsford 2nd,	do	do
7 Curly Prince 2nd,	do	do
8 Lord Keane,	do	do
9 Lord Clive,	do	do
10 Hartland 2nd,	do	(Oct. 1880) Vol. IV, p. 82
11 The President,	do	do
12 Havelock,	do	do

GUERNSEY BULLS.

1 Auld Jones,	<i>Jour. Ag.</i> (Oct. 1880),	Vol. IV, p. 82
2 Bonanza,	do	do
3 Gold Dust,	do	do
4 Prince Edward,	do	do
5 Duke or Kent,	do	do
6 Prince Arthur,	do	do

GUERNSEY COWS AND HEIFERS.

1 Bertina,	<i>Jour. Ag.</i> (Oct. 1880),	Vol. IV, p. 82
2 Bertha 2nd,	do	do
3 Lady Bird,	do	do
4 Daisy,	do	do

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