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THE

# CANADA FARMER

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NEW SERIES.

## The Field.

### Forest Culture.

At the late National Agricultural Congress, held at St. Louis, Missouri, the committee on forest culture made the following report. It is of interest, as verifying the experience of many practical men, who have given this subject much study.

The forests of the continent are rapidly passing away. Large districts in the Atlantic States are already stripped of their most valuable timber. In less than twenty-five years the accessible forests in the region of the lakes, on the upper waters of the Mississippi, and in the British Possessions adjacent, will be exhausted. The industrial progress of the Southern States is consuming the trees, both deciduous and evergreen, at an accelerated rate. In the Rocky Mountain regions (where the hard woods are unknown), the pines, spruces and cedars are disappearing before the farmer, the miner, the architect and the railroad builder. On the Pacific coast, the immense home demand, ever increasing, together with the exportation to England, France, Australia, China, Japan, South America, Mexico, and the Pacific Islands, foretell the exhaustion of the California timber trees in twenty years; and those available in Oregon and regions northward, in a brief period.

The demand for the products of the forest constantly increases. The supply constantly, and in a growing ratio, diminishes, and prices constantly augment. The causes now in operation, and daily gaining strength, can have but one effect, that of exhausting all of the available sources of supply within the lives of persons now in existence.

This appalling prospect, the view of which becomes the more vivid the more it is studied, should arouse the farmers, land owners and legislators. It is vital to the future welfare of our people that the reproduction of our forests should at once begin, not on a

small scale or in a few localities, but in large measures and co-extensive with our settlements. A broad statesmanship, in the National and State Legislature, should at once take up the subject, and deal with it year by year, until the great work shall be adequately begun.

The few and hesitating experiments in isolated localities, which have been made in the growing of forest trees, have no significance so far as the general supply of future wants is concerned. But they are of inestimable value, in so far as they teach the ease and comparative rapidity with which forest trees, useful to the farm, to the work-shop and to the railroad, may be produced; and in so far as they show that the agricultural men of the country have already (in advance of the men in high political life) appreciated the necessities of the present and the future. They are also of value in demonstrating that, however remote the profits of forest culture may have been heretofore considered, it is yet true that the artificial plantation may in a very few years, by judicious planting at first, be made to yield current returns equal to the cost of planting and care.

Modification and ameliorations of climate, due to the destruction or the extension of forests, have begun to enlist serious consideration. There can be no doubt of the beneficial influence of forest areas equal in aggregate to one-third or one-fourth of the entire area of any extensive region. But, however important climate effects may be in this connection—however desirable it may be that the crops and animal life of the farm should enjoy the benefits of forest influences and shelter, the need of extensive forest planting is imperative enough without taking into consideration its effect on atmospheric movements, temperature, or rainfall. The store, the dwelling, the wharf, the warehouse—all these, and more, demand action, demand it in the name of domestic life, of farm economy, of commerce, of all the arts of our civilization. What we shall save in climate by preserving forest areas, or gain by their extension, is just as much to be enjoyed in ad-

dition to other compensations. The less violent sweep of the winds in Illinois, as compared with forty or fifty years ago, due to the obstruction caused by buildings, hedges, fences, orchards, artificial groves, and wind breaks on the prairies, speak to the understanding of plain men more forcibly than any language we could use.

There may be those who regard forest planting as a work of mystery and grandeur, beyond the reach of the common farmer. This is a mistaken view. Nearly all the most important deciduous trees may be grown from the seed as readily as Indian corn. Of many species the seed may be sown broadcast and harrowed in, if the planter prefers to use the seed lavishly rather than give more care. The seeds of many trees may be planted either in the fall or spring as may be most convenient. Some of the softer wooded trees grow from cuttings as readily as the grape; and with most deciduous trees, the seeds or cuttings may, if desired, be at once planted where the trees are to stand. Nor need the most unlettered farmer deny himself the pleasure and profit of the conifers and evergreens. The plants, furnished at prices which are insignificant in comparison with their value, are abundant at reliable nurseries, and with the simple precaution of keeping the roots moist, and proper care in planting, are as sure to grow as any other tree or shrub.

No part of the earth is blessed with a greater variety of useful trees, both of the hard and soft wooded kinds, than the United States; and these native trees can all be readily grown in artificial plantations. It is not alone the pines and spruces and cedars that make up our valuable timber. The harder wooded trees—the ash, the oaks, the hickories, the maples, the walnuts, and the chestnuts—of which we have heretofore been so lavish, have a value in the arts that no figures can estimate. They may be said to be essential to the continuance of our present civilization. New forests of these trees must be grown, or our grand-children must depart from our modes of life. West of longitude

100' from Greenwich, the material for a common waggon does not grow on the continent, and we are fast exhausting it east of that meridian. Ohio and Indiana, Kentucky and Missouri, have girdled and burned hard wood trees that would to-day be worth hundreds of millions of dollars. If failing springs and protracted drouths and extremes of temperature suggest replanting, their people may safely rely on a future market more certain than that of any other product of the soil.

The remedies were embodied in the following resolutions:

1. *Resolved*, That we recommend farmers throughout the United States to plant with trees their hilly or other waste lands, and at least ten per cent. of their farms with trees, in such a manner as to provide shelter belts of clumps and rapid growing and useful timber.

2. *Resolved*, That we solicit the Legislature of the several States to pass laws providing bounties for planting useful trees, encouraging the planting of highway, and for the provision of State nurseries of young timber trees, and also the appointment of an Arbor Day for the annual planting of trees, as has already been done in the State of Nebraska.

3. *Resolved*, That we ask our Congress of the United States to require, so far as practicable, that hereafter railroad companies and settlers receiving the benefit of the homestead and other acts donating lands, shall plant with timber trees one-tenth of the lands so donated.

### Care of Machines and Implements.

Agricultural machines and implements cost a great deal of money, and they ought to be well taken care of, so as to preserve them in working order as long as possible. Threshing machines, reapers and mowers, seed drills, etc., generally suffer more damage from exposure to the weather when idle, than from the wear and tear occasioned by the work which they perform. There should be an implement house on every farm, large enough to contain all the machines and implements. There should also be a tool house for small tools. Every machine, implement, and tool, when not at work, should be in its proper place in the house or shed, painted and repaired, and safe from damage of every kind. When managed in this way, machines and implements will last at least twice as long as they would if left lying around loose, the iron work gathering rust from rain and dew, and the wood work rotting from the effect of wet and damp, or shrinking and cracking in the sun. A well stocked tool house is a good indication of the intelligence and orderly habits of its owner.

It is said that more than \$5,000,000 is lost every year by the farmers of the United

States by damage done to machines, implements, and tools, from exposure to the weather at times when they ought to be carefully housed. The farmer who complains of the high price of machines should make them last as long as possible by protecting them from the rays of the sun in summer, and from rain, frost, and snow at other seasons. It has been proved that even a grindstone becomes damaged by exposure to the weather; it is not to be wondered at, then, that machines and implements made of wood and iron should be easily damaged by rain, etc. A thrifty farmer understands that a dollar saved is just as good as a dollar earned or gained in any way.—*Western Rural World*.

### A New Enemy to the Corn Plant.

We notice that in many places, this season, that the corn plant is attacked by a minute insect, very similar to what gardeners who have graperies call the "thrip." It is so small that it can only be seen distinctly by a pocket lens, when it appears as a small whitish-brown thread, about a line in length. It is however, very active. When disturbed, it jumps like the cabbage-flea. It feeds on the green matter of the leaves, usually eating in straight lines up and down between the ribs, leaving an appearance of delicate thread-lines where they have fed. That they are a serious injury is evident from the fact that the corn so attacked is not so thrifty and vigorous as that free from the visitations of the insect. Indeed, as the effect is to prevent the use of half the leaf-surface to the plant, it must be an injury. It is the same as plucking off half the leaves, the consequence of which we all know very well. Whether it has come to stay, or is only a casual visitor, remains to be seen.—*German-town Telegraph*.

### Effects of Forests on Climate.

The following observations, (from the *London Garden*) while they may not establish the effects of forests on climate, are certainly valuable in that direction. They were made by M. Mathieu, Professor in the School of Forestry, at Nancy, and were reported by him to the Agricultural Congress, at Nancy, in 1869. They include the first eight months of each of the years named, and were made with reference to each of the following points:

1st. Does the wooded condition of a country exercise an influence upon the amount of rain it receives?

The answer to this question was attempted by taking two stations at equal height above the sea, but separated between fifteen and twenty miles, the one situated in a wooded and the other in a cultivated country, and observing the rainfall. The result, reduced to inches, was that at the agricul-

tural station the rainfall for the three seasons was 82.02 inches, and at the forest station 93.13 inches; difference in favor of the forest station, 11.11 inches.

2d. Does the covert of the forest, by intercepting the rain falling from the atmosphere, diminish to a considerable extent the amount of rain that reached the ground?

This was answered by placing rain-gauges beneath the trees, and in the open ground close at hand, and comparing results, which were as follows:

In open ground,	92.09 inches.
Under the trees,	87.74 "
Excess in open ground,	4.35 "

This shows that while some of the rainfall in the forest does not reach the ground, still by comparing what did reach it with the result at the agricultural station, we have 87.74 inches for the rainfall under the trees, and 82.02 inches for the fall at the agricultural station, an excess of 5.72 inches in the forest.

3d. What is the effect of a wooded country on the conservation of the moisture received by the soil?

The answer was sought from a comparison of the evaporation from two equal vessels, one placed in the forest, the other in the open ground. Evaporation went on five times as rapidly, taking the whole year into consideration, in the open ground as in the forest, ranging from three to six times between April and July; 85 per cent. of the rain falling from the open field evaporated, whilst only 22 per cent. of that falling in the forest was lost.

4th. What is the influence of forests upon temperature?

The experiments in this direction had been conducted but a short time, but go to show that the mean annual temperature in the woods is lower than in the open country, and that the difference is least in winter and greatest in summer. In 1868 the mean temperature of the forest was lower than that of the open fields by 4° 35' in the morning, and 9° 33' at night, in July; which difference fell in December to 0° 48' in the morning, and 0° 94' at night. Again, the average variation in temperature was much greater in the open country than under cover of the forest between day and night. It ranged from 0° 05' to 5° 57' in the open air, but only from 0° 04' to 1° 22' in the forest.

### Hay Caps.

During the season, caps for hay and grain have been extensively used at the Michigan Agricultural College. Dr. Miles, says that they have much more than paid for themselves and all the trouble of putting on. They are made of heavy cotton cloth, with a string to each corner, to fasten to a stake or a small weight. On many farms they can be put on by girls and boys.

### Chance Visit to the Agricultural Implement Warehouse, Toronto.

A few days since I was accidentally obliged to call at the above establishment of Mr. Kenne's, and was much gratified in inspecting the various kinds of farmer's help to save labour. I do not mean to describe or recommend any. Were I critically to attempt to do so, it would imply that my knowledge of farm implements was most extensive. I certainly have been engaged in agricultural pursuits all my life, and could use to advantage with my own hands, any one of the tools I saw, but it is quite another thing to sit in judgement on the merits of all. One reflection of a serious nature did cross my mind and it was this:—Are all these implements useful and labour saving in their class—I answered "most certainly"—and I think any one would echo my opinion. Each new and improved farm implement and labour saving machine that I saw, struck me as being one more step towards placing agriculture, where it certainly ought to be, amongst the first and most certain means, for those engaged in it, of making a peaceful and abundant living.

The great draw-back to my mind, lay in the want of capital to stock a farm as it should be done, with one of each kind, or class, of all the implements exhibited, and the difficulty seemed to be to know which to except as necessary. All farmers grow the same crop or nearly so, thousands, upon thousands, have the same sized farm, and if the possession of one "improved plough," "horse rake," "mower," or what not pays one farmer to buy and use, it certainly must pay *all* to do so, and following the same train of reasoning every one ought to have one of each sort, or he certainly does not do as well as he might do, and in fact ought to. "But he has not the money to pay for this mass of tools," very true, but that argument does not for one moment prove he had not better have them, if he be able to buy them.

Hence it follows that if this mass of labour saving tools pay twenty farmers to have one or two each of the different kinds it must pay "one farmer" to have all twenty of them or one of each kind, provided he has the money to spare, and we are absolutely forced back into the position, that capital is most necessary to farm with success in Canada. Amongst all the number of excellent inventions, none struck my fancy more than the single horse Iron Plough. I am a great advocate for light tools, and this little plough was hung so deftly on its two iron obliquely placed wheels, which peculiarity entirely dispensed with a land side, and the friction, as well at the side as at the bottom of the furrow. "Compare this with the old-fashioned English plough," as well might we compare the vast extent of the work done by one of our beautiful steel forks, with an old-fashioned English or Irish one; as well compare the handling of this little compact iron plough with one of the old fashioned

heavy cast-iron mould board horse killers, that we formerly considered it advisable to use, and here we can feel the difference, and use the fork ourselves, but in ploughing our horses do the work, and we can only see the work done without feeling the power exercised to do it. Very few farmers test a plough by a dynamometer before or after buying it.

### Tree Planting.

We learn from the *Herald* that Nebraska has designated the tenth of April as a Rural holiday to be known as ARBOR DAY. It is to be observed as an Agricultural Festival, and devoted to the planting of fruit and forest trees. The Agricultural Society of that State has offered a premium of *one hundred dollars* to the Farmers' Society of the County that plants the largest number of trees on that day, and *twenty-five dollars* to the man who himself plants the most.

Why can we not do something like this for Ontario? If our farmers could be encouraged to plant trees around their dwellings, along the road-side, and upon the wind-ward side of their farms, what a beautiful appearance our Canada would soon present. How much more attractive to the stranger from the old-world, seeking a home in the new, for himself and his children.

Farmers of Ontario, awake, take hold of this matter, stir up your Agricultural Societies to do something more than give prizes for fat cattle and plethoric cabbage heads. A man's life does not consist merely in the enormous size of the animals he raises, or of the roots he cultivates. Has he no pleasure in being the owner of a pleasant home? Does he take no pride in being a dweller in the prettiest county in the Province, and in the handsomest township in that county? Let us set about this matter at once, nor let any Nebraska get ahead of us in this matter.

### Application of Manures.

The effort to work manures in deeply with the idea of fertilizing the subsoil which was extensively held but a few years ago, is now pretty generally given up by most practical farmers. That idea was, if we mistake not, advanced and maintained by Prof. Leibig and others. Now the most intelligent scientific, as well as practical men believe it most for the farmer's interest to keep manures near the surface.

At a recent meeting of the Farmers' Club, at London, Prof. Voelcker said, in reply to some statements made by Alderman Mechi, "Don't manure subsoil of any kind, light or heavy, manure the topsoil, and keep the manuring elements as near as you possibly can to the surface so that the young plant may derive immediate advantage from the food prepared for it." This we take it, is the true doctrine very forcibly expressed, and we believe it accords with the experience of the most careful observers both in this country and in England.

This position does not imply that lands should not be deeply ploughed and mellowed only that manures should not be buried deeply. We like deep ploughing. We like, in turning over the sod, to lay up to the sun and air a sufficient depth to have the surface of earth and mork.

Without breaking up the turf and sod. But we do not like to turn under the manure too deep, and we think a great deal of manure has been comparatively lost and wasted. If the sod is turned over deeply there is some satisfaction in manuring and fertilizing the loose and mellow earth that is turned up. This is a practical point of very considerable importance, and is worth careful investigation."—*Massachusetts Ploughman*.

### Covering Manure.

It is remarkable that more attention is not given to the subject of covering manure from the weather, and especially from too much rain. Those who have given the matter particular attention have found that the manure so protected is worth double that which is left out in the open air. Two loads for one is a profit few farmers can afford to lose. There is no question which so vitally concerns the farmer as this one of manure. Much that he does has reference to it. Straw is not to be sold because it makes manure. Stock is fed through the winter for the express purpose of manure making. Articles which will scarcely pay to send to market are nevertheless taken to the city in order that manure may be brought back as a return load; and yet the whole of the manure made remains all the season exposed to the sun, wind, and rain, until it is diminished in value to so great an extent as it is.

The trouble is probably that few really believe that exposed manures undergoes this loss. But the matter has been too thoroughly tested to admit of a doubt. We know first class farmers who did not themselves believe it, until by actual experiment they found out its truth.

In arranging farm buildings it will pay well to look as much to the preservation of the manure as of the hay or grain, and those who have their buildings already finished without these manural arrangements will find that twenty five or fifty dollars spent on boards for a covered shed will rank among the best investments ever made.—*Germantown Telegraph*.

LATE ROSE POTATO IN VIRGINIA.—C. S. B., Lexington, Va., writes the *Country Gentleman*, that accidentally meeting with a barrel of potatoes of this variety from New York, on the 30th of March last, he obtained three of the tubers and planted them with the following result:

"I cut them, leaving one eye to a piece (total weight two pounds) and planted them by the side of some Early Rose potatoes that had been planted about two weeks, leaving a distance between them three feet wide, and putting the pieces in the row 12 inches apart. I dug them a few days ago, and had nearly two bushels by measure that weighed one hundred pounds. The people in this country think that a pretty good yield—I don't know what it would be in New York."

## Stock Department.

### Cattle Disease in England.

The inspectors returns for the past week for the county of Buckingham show that foot-and-mouth disease now exists on 509 farms, the number of animals affected being 10,748 comprising 3722 cattle, 6647 sheep, and 379 pigs. 124 animals, principally pigs have died of the disease during the week. The greatest amount of disease exist in the following districts:—Aylesbury district, 36 farms, 621 animals; Linslade, 23 farms, 617 animals; Fenny Stratford, 33 farms, 372 animals; Newport Pagnell, 60 farms, 1414 animals; Stony Stratford 31 farms, 1066 animals; Windsor 43 farms, 546 animals; Steple Claydon, 70 farms, 1637 animals; Brill 62 farms, 953 animals; Midsmoreton, 36 farms, 625 animals, Great Marlow, 13 farms, 217 animals.

The disease is spreading all over the county of Cambridge. Animals which had recovered are being attacked a second time, and the malady is assuming a very serious form. Sheep are the chief animals affected, and there is scarcely a farm free from the complaint.

Wednesday's returns of the foot and mouth disease in the county of Dorset give the following figures:—Bridport division, 76 cattle, 658 sheep, 35 swine, on 14 farms, including 7 fresh outbreaks; Cerne Abbas division, 368 cattle, 2565 sheep, 127 swine, on 11 farms; Dorchester division, 370 cattle, 1872 sheep, 123 swine; Shaftesbury division, 262 cattle, 75 sheep, 25 swine, on 109 farms, Sturminster division, 1067 cattle, 193 sheep, 87 swine, on 107 farms; Wareham division, 195 cattle, 881 sheep, 54 swine, on 36 farms; Wimborne division, 161 cattle, 3519 sheep, 49 swine; total number of diseased animals, 12,798. About 70 animals died from the malady during the week.

The last official returns show another considerable increase in the number of cases in Gloucestershire. The week before last the total number of cases was 12,232; last week it increased to 16,884; the number of farms infected the week before last was 377; last week there were 428. The number of fresh attacks last week was 6845, and 2087 animals were reported as recovered. Eighty cattle died the week before last; last week, 112—16 being cattle, 6 sheep, and 80 pigs.

In Huntingdonshire there is a further increase. The last official returns show that the number of stock affected is 4545, which is upwards of 400 over last week. Of these 3101 are sheep. The pigs attacked are comparatively small in number.

During the last week in Northampton 32 cases of foot-and-mouth disease in beasts and sheep have proved fatal out of 6950 affected; and in pigs 8 were fatal out of 286 affected. Three cases of scab in sheep have

been reported, and 3 fatal cases of pleuro-pneumonia in beasts.

The last official return as to the foot-and-mouth disease in Norfolk exhibits a total of 11,411 cases. This return is brought down to August 17th, and compares with 16,634 cases in the week ending August 10th, 12,783 cases in the week ending August 3d, 13,976 cases in the week ending July 27th, and 15,302 in the week ending July 20th. The number of cases occurring in the Aylsham district in the week ending August 17th, was 1157; in the Downham district, 2,001; in the Swaffham district, 1635; in the Docking district, 949; and in the Walsingham district, 942. The number of cases of pleuro-pneumonia officially recorded in Norfolk in the same week was 48. No cases of sheep scab were recorded.

The returns for last week for Lancashire show an alarming increase in the number of animals affected by the disease. In the Preston district, comprises the hundreds of Amounderness, Leyland and Blackburn, there were 120 fresh outbreaks, and there are now 311 farms affected 2358 cattle, 798 sheep, and 21 swine; being an increase of 12 outbreaks 95 farms affected, 583 cattle, 201 sheep and 11 swine. The disease is mostly prevalent in the townships of Kirkham and Girstav. In the Salford district there were 28 fresh outbreaks during the week.

The disease also continues to spread at an alarming rate in Nottinghamshire and Lincolnshire, thinning the markets, and rendering necessary the enforcement of orders by the local authorities prohibition the removal, except by an order from the inspector, of any animal suffering from the disease or which has been exposed to contagion. The complaint appears to be particularly rife in the neighborhoods of Newark, Lincoln, Stamford, Spilsby, and Wisbeach. The Notts justices have met at Newark and issued a notice to the public requiring owners of cattle to desist from exposing affected cattle for sale, to disinfect yards, stables, and sheds, and to keep affected animals isolated from the remainder of their herds, under a penalty of £20. It is hoped these restrictive measures will stay the progress of the complaint.

The disease is also spreading in Somersetshire. At a meeting of the sub-Committee under the Contagious Disease (Animals) Act, held at Long Ashton on Friday last, the inspector reported that since the last meeting 151 fresh cases had occurred in the district, and that the number of animals affected was as follows:—20 bulls, 322 cows, 116 oxen, 318 heifers, 92 calves, 2482 sheep, and 131 pigs—total, 3511.

In Worcestershire the disease continues to make increased progress, and according to the returns of the Chief Constable of the county (Colonel Carmichael), it appears that the number of animals affected in the week ending Saturday last shows an increase of 99 on the week. The total numbers were—

Week ending August 10th, 1126; August 17th, 1225. Not a single district of the county is free, and, in all, the numbers, as a rule, are in excess of what they had previously been. A large number of sheep are affected with the scab. The number of farms on which foot and mouth disease prevails is 123, as against 104 in the previous week.

As regards Scotland, it is reported from Newton Stewart that foot-and-mouth disease has appeared among the milch cows of the district.

The disease has also broken out recently at Inverkip, and is spreading the stock of three farms being at the present time affected.

Foot and mouth disease continues to spread in Dumfriesshire, the new outbreaks from the 13th, to the 20th instant being returned by the inspector as 77 cases. In some parishes the disease is very virulent, and there are many deaths among cattle. Three outbreaks of pleuro-pneumonia have been reported, two of these at Castle Milk Mill, St. Mungo parish, and Goosehill, Sanquhar parish. The third case is in Clossburn, among grazing stock formerly at Goosehill.

At a meeting of the Fifeshire Local Authority on Tuesday, several additional farms were declared infected with pleuro-pneumonia.

From Kinross shire we hear that a fresh outbreak of pleuro-pneumonia has occurred at Wester Balado; and it is also reported that the same infection has appeared in Terilge Farm. —*The Farmer.*

### Live and Dead Weight of Animals.

The amount of meat obtained from a domestic animal sold by its live weight is very variable, and experiments have recently been made in Liverpool to ascertain the proper allowances to be made. From the statistics to be derived from the public slaughter-houses, or abattoirs, of Paris and Brussels, it appears that the race and the condition of the animal, besides many other circumstances affect the result, and that certain animals yield as much as 70 per cent. of meat, while others only give 50 per cent. The mean weight of meat produced, however, is calculated at 58 per cent. of the live weight in beef cattle. In the case of sheep, the proportion is from 40 to 50 per cent. From experiments made, it appears that the different products obtained from oxen and sheep are as follows:—An ox of the live weight of 1,322 pounds yields, meat, 771.4 pounds; skin, 110.2; grease, 88; blood, 55.1; feet and hoofs, 22; head, 11; tongue, 6.60; lungs and heart, 15.33; liver and spleen, 20.05; intestines, 66.15; loss and evaporation, 154.322—making the total of 1,322 pounds. The products from a sheep weighing 110.2 pounds are as follows:—Meat, 55.1 pounds; skin, 7.714; grease, 5.51; blood, 4.408; feet and hoofs, 2.204; head, 4.408; tongue, lungs, heart, liver and spleen, 4.408; intestines, 6.612; loss and evaporation, 19.836—making the total of 110.2 pounds.

### The Foot and Mouth Disease.

At the Petty Sessions of Tunbridge, Kent, just held, Sir David Salomons, M.P., presiding, Frederick Turner, farmer, of Nizele Heath, Hadlow, appeared in answer to a summons which charged him with having had in his possession, without notifying the police, three cows and heifers, two steers, and a considerable number of pigs affected with the foot and mouth disease. The defendant, by proxy, admitted that he knew the animals referred to were suffering from the disease, but said he did not know it was necessary to inform the police of it. Superintendent Dance said he heard in a casual way that there were animals affected on the farm, and he got a veterinary surgeon to examine them. The claimant imposed a fine of 17 and costs.

In Berkshire the disease continues to spread, notwithstanding all the precautions adopted. In the Farringdon division upwards of 100 cattle, besides sheep and pigs, have been attacked within the past few days, the number affected being—cattle, 255; and sheep, 372. Few pigs are suffering. A number of fresh outbreaks occurred in the Newbury division last week, and cattle, sheep, and pigs are affected in nearly 30 places in that district. At Henley-on-Thames Petty Sessions, before Lord Charles and a full bench of magistrates, Mr. John H. Wert, sheep dealer, of Goring Heath, was summoned by the inspector of cattle for that division of Oxfordshire, on the charge of having on his farm at Checkendon on the 16th ult., 437 sheep and lambs affected with the foot and mouth disease, of which he did not give notice to a police constable, contrary to the provision of the Contagious Diseases (Animals) Act, and of an Order in Council. The Inspector having given evidence, Mr. Mellet, veterinary surgeon, of Henley-on-Thames, was called and proved that he visited the defendant's farm and examined his sheep and lambs. He found about 120 of them suffering with foot and mouth disease, and in some of the lambs the disease was developed in an extraordinary degree. On the defence, it was contended that the disease with which the sheep were affected was not the foot and mouth disease, but a disease that had been prevalent among sheep for the last 40 years. The justice convicted the defendant in the mitigation of a penalty of 10*l.*, with costs, 2*l.* 5*s.* Mr. Robert Lovegrove, farmer, &c., of Caversham near Reading, was also charged by the inspector with having a bull, four cows, a calf and a pig, affected with the foot and mouth disease, and neglecting to report the same to the inspector. Mr. Lovegrove pleaded guilty, but said his servants had neglected to give information to the inspector, as he told them to do. The magistrates fined him 7*s.*, with costs, 1*l.* 18*s.*

The disease also continues to spread at an alarming rate in Nottinghamshire and Lincolnshire, thinning the markets, and rendering necessary the enforcement of orders by

the local authorities prohibiting the removal except by an order from the inspector, of any animal suffering from the disease or which has been exposed to contagion. The complaint appears to be particularly rife in the neighbourhoods of Newark, Lincoln, Stamford, Spilshy, and Wisbeach. The Notts justices have met at Newark and issued a notice to the public requiring owners of cattle to desist from exposing affected cattle for sale, to disinfect yards, stables, and sheds, and to keep affected animals isolated from the remainder of their herds, under a penalty of 20*l.* It is hoped these restrictive measures will stay the progress of the complaint.

The disease is also spreading in Somersetshire. At a meeting of the sub-Committee under the Contagious Diseases (Animals) Act, held at Long Ashton, on Friday the 14th inst., the inspector reported that since the last meeting 14 fresh cases had occurred in the district, and that the number of animals affected was as follows:—20 bulls, 322 cows, 116 oxen, 248 heifers, 92 calves, 2,482 sheep, and 131 pigs—total, 3,511. At the meeting of magistrates for the division of Weston, near Bath, on Saturday, Mr. Superintendent Morgan reported 13 fresh outbreaks of the disease in the parishes of Weston, Twerton, Lambie Hay, Freshford, Charterhouse Hinton, Wellow, and Bathampton. The number affected was 74 cows, 19 heifers, 3 calves, 64 pigs, and 64 sheep. There have since died 1 cow, 4 calves, 24 pigs, and 1 sheep.

The last official returns show another considerable increase in the number of cases in Gloucestershire. The week before last the total number of cases was 12,232; last week it increased to 16,834; the number of farms infected the week before last was 376; last week there were 425. The number of fresh attacks last week was 6,845, and 2,087 animals were reported as recovered. Eighty-nine died the week before last; last week, 112—10 being cattle, 6 sheep, and 80 pigs. In the Sodbury district, 5 cattle, 1 sheep, and 12 pigs have died. How the disease spreads seems a mystery to all. The Cirencester Inspector, in whose district nearly 2,000 cases have been attacked during the past week, writes:—"The disease still continues to spread in this neighbourhood, and remains on the farms longer than it formerly did. The disease is on 54 farms, and in all the 21 parishes in this district. No reason can be assigned for its spreading." The inspectors from the other districts nearly all write that the disease is spreading and they cannot account for it. The number of cases in each district is as follows:—Berkeley, 396; Bristol, 470; Campden, 419; Cheltenham, 696; Cirencester, 5,811; Dursley, 207; Forest, 173; Gloucester, 575; Sodbury, 1,654; Stow, 550; Stroud, 732; Tetbury, 1,285; Wotton-under-Edge, 593. The Tewkesbury and Winchcombe districts have been free from disease for several months.

TO THE EDITOR OF THE TIMES.

Sir.—Foot and mouth disease has spread so rapidly and caused such heavy losses this season as to cause alarm among the owners of stock.

You have of late devoted so much space to the discussion of the disease that I venture to address to you a few observations on the subject. One of my objects is to fix attention on the circumstance that while it is admitted on all hands that this malady inflicts an enormous loss on the agricultural interests of the country, no well-directed effort is made to investigate the laws by which it is propagated.

One of the leading agricultural authorities has just propounded the notion that if foot and mouth disease were "stamped out" it would soon break out again. My own independent observations induce me to say that this view of the case is not tenable. As it is entertained by many persons, and as a persistent agitation, calculated to deceive alike the owners of stock and the public, is based upon it, I wish briefly to state the ground on which my opinion is founded. In the first place it is important to bear in mind that this is not an indigenous disease, that it was imported from the continent of Europe into the south of Ireland, whence it passed into England; and that it has never since been "stamped out." I am aware there are men who hold the opinion that the disease is capable of being developed in these islands spontaneously. This opinion does not accord with careful observation. I know districts in Ireland, in which it has never appeared, and these happen to be the very places where cattle receive the worst treatment and where it would be most liable to be produced if capable of spontaneous generation. Now the disease being of foreign origin and not capable of spontaneous generation, it is manifest that if we could place such restrictions on our cattle trade for a limited period as would stamp out the disease it would not and could not appear again unless imported afresh. It is well known that the cattle plague restrictions checked this disease. Had the country been compelled to continue those restrictions much longer foot and mouth disease would have disappeared altogether. Reimpose those restrictions to-morrow, and you will effectually "stamp out" this disease.

Many persons, while agreeing with me thus far, would add that as the reimportation of the disease is inevitable, and as it propagates itself in a way which baffles alike scientific skill and practical experience, it could be got rid of after each reimportation only by the reimposition of these restrictions.

I must admit, in common with all persons who have had extensive experience of this disease, that it has often appeared in cattle under my direction in a way which completely puzzled me. But recent observations and experiments, undertaken especially in the hope of throwing light on the nature of

the disease, have enabled me to understand what used to appear mysterious. I shall cite an illustration. The notion is very generally entertained that the disease is carried from farm to farm through the air. I shall briefly state a few facts which show that if carried at all in the air, the range of its power of transmission is very small.

I have at Glasnevin, for educational purposes, three farms—one of 5½ acres, one of 25 acres, and one of 140 acres; each of which is worked independently of the others. I have taken all possible precautions to protect the animals on these several farms from infectious diseases. For example, where a piece of pasture adjoins the public road I have erected barricades to prevent the cattle from coming in contact with diseased animals which may pass along this road. Notwithstanding these precautions, and that no new purchase had been made for months, foot and mouth disease appeared last month in one of the animals on the 140-acre farm. It seemed to some of my neighbours and pupils to be a case of spontaneous generation. But it was easy to trace the outbreak to an infected lot of cattle on the opposite side of the road. Those animals had access to a brook which supplies water to the cattle on our 140-acre farm. As soon as the disease broke out I took steps for preventing intercourse between this farm and the two smaller farms. I further directed that as soon as an animal should show any signs of disorder it should be withdrawn from the herd and placed in an hospital. On this farm there are 53 head of cattle of all ages. Of these 22 got the disease, and it has already disappeared. On the 25-acre farm there are ten milk cows and two calves. These animals grazed in a field which is within 28 yards of the field of the 140-acre farm in which the disease broke out, and within 70 yards of the shed used as an hospital, yet none of these got the disease.

Last year also I had this disease at Glasnevin. It appeared first on the 140-acre farm and in a cow bought at the fair of Drogheda, where she came into contact with diseased animals. Last year it spread to the 25-acre farm, and on diligent enquiry I was able to trace the transmission of the infection to the use of a bucket taken by a thoughtless boy from the diseased to the healthy cattle.

These facts show the value of isolation as well as the importance of preventing the movement of cattle during the prevalence of foot and mouth disease. The same holds good with regard to that insidious plague pleuro-pneumonia. Many stockowners are ignorant of the nature of infection, and do not understand the advantage of imposing restrictions on the movement of cattle. The best way of overcoming their prejudices, and of arriving at a knowledge of the principles by which legislation on these infectious diseases ought to be governed, is by instituting a rigid inquiry into the mode by which they

are propagated, if the initiative were taken by any central competent body, such as the Royal Agricultural Society. I fully believe the landed gentry and farmers would contribute funds to prosecute the inquiry. I also feel assured that the stock owners of Ireland, who are a wealthy class, and suffer from infectious diseases an annual loss equal to the whole of the real taxation of their country, would not be slow in coming forward to support such an effort to serve them.

I remain, Sir, your obedient servant,  
THOMAS BALDWIN.

Albert Model Farm, Glasnevin,  
Dublin, Aug. 18.

### The Booth Short-Horns and the Herefords.

We copy the following excellent reviews on the Short-Horn and Hereford prizetakers in England this year from *Bell's Weekly Messenger*. We take special pleasure in giving this long article a place in our columns, in that, from them we particularly learn that the old Booth blood as shewn especially in Killerby or Warlabby strains still holds its own in the Royal and other large English shows.

#### SHORT-HORNS AT CARDIFF.

It is important from year to year to follow the awards of the Royal Agricultural Society's judges with a view to the blood which produces the winners, and curious as well as instructive to watch the rise and maintained excellence, or on the other hand the decline, of families and tribes of short-horns. Some new names will crop out for a season or two, families unheard of before coming into the foremost ranks and then disappearing, the progeny, whether from unsuitable alliances, atavism ("breeding back") or other causes, never again taking a position of note. Sometimes a new family (or we may rather say a branch of an old sort grafted and growing upon a fresh stock, or old materials mixed in a manner unfamiliar) will come forward creditably and maintain a creditable standing; and still through all the vicissitudes of family there are good old tribes that can always show animals second to none when forced to the test. They may retire for a time (so far as regards showyard honors) in consequence of the temporary lack of members, of age and in condition for the show; or their owners from various reasons may decline to exhibit them or train them for exhibition; but so surely as they remain in good hands will they be heard of again, and again though either their legitimate representatives or the offspring of their males in herds of other blood. On the latest occasion, the recent national meeting at Cardiff, the colors of Warlabby were borne to the front by Mr Outhwaite's Royal Windsor, the premier bull of the year, Mr. Linton's Lord Irwin, the second winner, Mr. Bowstead's Flag of Britain, third prize-taker, and Mr. Cooke's

St. Ringan, the reserve number bull in the same class. Mr. Brierly's third among the two-year old bulls, Prince Charlie, is a son of the pure Booth bull Prince of the Realm, from a dam by Mr. Chaloner's Fugleman, a son of Warlabby Hopewell. Mr. Linton's Leeman and Mr. A. H. Brown's Duke of Aosta, first and second prize yearlings, have each a preponderance of Booth blood; and Lady Pigot's first prize bull calf, Rapid, is of Booth decent on both sides of his pedigree. The first prize cow, Mr. Brown's Primrose, is by a sire of chiefly Booth blood; and the second prize two-year old heifer, Mr. H. F. Smith's Lamwath Violet, is full of Booth. To these might be added several prize and commended animals owning lesser proportions of the Killerby or Warlabby element, but those already mentioned (a fair number of winners for one strain of blood to contribute to a Royal show) sufficiently prove that Booth short-horns are still formidable competitors in the ring. If it were not so, if the Warlabby type had disappeared or suffered marked deterioration, a loss incalculable and probably irreparable, would have befallen the short-horn race—a loss which would be the more keenly appreciated as symmetrical samples of the short-horn breed become more scarce. We hope to see the truly moulded form, the well-set heads, broad level backs, straight underlines, arched ribs and prime flesh of the grand old sort still reproduced in specimens of successive generations, proceeding both from Warlabby itself and from the dependencies of Warlabby, the herds owing the influence of Warlabby sires.

\* \* \* to return to the first class of bulls:—Royal Windsor (29890), white, was bred by Mr. Willis of Carperby, and was by Windsor Fitz-Windsor (of the Killerby Mantaini and Warlabby Broughton or Bliss families combined), from a dam by Mr. Richard Booth's Fitz-Clarence, the son of that most exquisitely lovely cow Nectarine Blossom. Lord Irwin, also white, bred by his exhibitor, was by Lady Pigot's pure Booth bull British Hope, his dam having the blood of Cricklank's Magnus Troil (14280) combined by in-and-in breeding. Magnus Troil had the Warlabby and Wiseton blood through his sire The Baron Flag of Britain was bred by Mr. Torr, whose success in reproducing the Warlabby type in his herd may be described almost as more than commensurate with his extensive use of Warlabby bulls, since it was partly owing to the consummate judgment displayed in their appropriate selection. A less skilful man might have done much less with equally good materials. Flag of Britain, like many other Aylesby short-horns, is several generations deep in Booth blood upon the well-known family of Flower Girl by Londesboro'. The three immediate sires in his pedigree are Breastplate, British Prince, and Vanguard, containing some of Warlabby's choicest and most valuable families. Mr. Lamb's Ignorant (28887), first among the two-year-old

bulls, is on the dam's side a grandson of Edgar, that massive and noble bull of Royal fame. Edgar, in his style, had very few superiors, not many equals. The sire of Ignoramus, Earl of Eglinton, had a fine dash of Lates blood in Truth Grand Duke and Lord Oxford, upon a family composed of Booth, Lax, and other old strains. Mr. George Garn's Earl of Warwickshire 3rd, (23524), next to Ignoramus in honor of precedence, has a decided predominance of Bates blood, with a touch of Booth and a knightly foundation. Mr. C. W. Brierly's Prince Charlie (29607), bred by Mr. Meadows of Wexford, we have already mentioned as inheriting Booth blood through Prince of the Realm and Fugleman. His Herd Book number, which we have supplied, is omitted in the Cardiff catalogue. Mr. Joseph Stratton's Master Manville (29325) has the old strains of Mr. Stratton's short-horns, with a little Booth in James 1st. Mr. Stratton's entry, like Mr. Brierly's, omits the Herd Book reference, which here again we have ascertained and added. A bull's number should always be carefully inserted in the certificate of entry, and as carefully copied by the compilers of the catalogue. The yearlings, of course, to which we now come, have not yet been registered in the Herd Book. Leeman, first on the list of winners, is another of Mr. Linton's, of Sheriff Hutton, whose herd, favorably noticed in the *Messenger* about six years ago, has continued to improve and to send out fresh prize takers. Leeman is by Mr. J. B. Booth's Serjeant Major (29957), from Mushroom by Earl of Windsor (17783), a Booth descended bull bred by Mr. Carr, and comes beyond from Magnus Troil and Bates (12451). Duke of Aosta, bred by Mr. T. H. Hutchinson (of Leicester sheep as well as short-horn fame) and shown by Mr. Brown, is by Mr. J. B. Booth's K. C. B. (26492), his dam Queen of Spain by the Warlaby Valasco, grandam by Young Hopewell, and son of Mr. Richard Booth's Hopewell; and Colonel Towneley's Baron Colling 2nd, who follows as third winner, is a son of Baron Oxford (23375) out of a 6th Duke of Airdrie cow, with Great Mogul and Master Batterly upon the Veillia family of Towneley beyond. However much of his merit may be due to the Batterly and other constituents of his pedigree, Bates blood must be credited with a considerable share, since Baron Oxford, a notoriously frequent sire of winners, is almost purely of that strain, which is represented also in the Airdrie Dukes, and in the grandsire of Great Mogul, the first Grand Duke. Among the bull calves Lady Pigot's Rapid descends from the Farewell (Crown Prince's) family of Warlaby, and is virtually pure Booth, a son of Bythis (25700—of the Warlaby Bonnet line), with only a dash of Parkinson's Clementi remote, lying occurring between the old Warlaby foundation, and the later additions of Baron Warlaby, British Prince, Valasco and Prince of Buckingham. Huback junior, who took the

second honors to Towneley, is from Duchess of Lancaster 5th, of the Barnpton Rose line, with Inglewood, Precedent, and Louis Napoleon 2nd intermediately, and his sire, the prize-winning Baron Hubback (25599) was by Baron Oxford, out of a Grand Duke of Lancaster cow bred at Beaumont Grange. Lastly, Mr. J. K. Fowler's third in the class, Royal Geneva, claims descent in large measure, though not purely, from Kirklevington short-horns. \* \* \* The first prize cow, Primrose, bred by Mr. L. C. Chrisp Hawkhill, was a strong infusion of Booth by her sire, a Stanwick bull, and by the mother some Princess blood mixed with the Faldon-side families of Mr. Milne. The second winner, Mr. W. H. Hewitt's Nelly, is compounded of the mixed families of the late Mr. Stratton; and Mr. Garne's Princess Alexandra, the third prize cow, has a lineage stating (at the nearer end) with the names, not prominently known to fame, of Rex (24946), Programme (20608), Progression (16770) and Tom Painter (15423), meaning relationship to the short-horns of Messrs. Bates, Booth, and Peel, Earl Spencer, &c., &c. By the by, were any of our readers struck with the number of good *white* short-horns at Cardiff? Nelly and Princess Alexandra are both white. As to the breeding (already sufficiently detailed) of the three prize cows, it is in every instance mixture, *apparently* without design or aim. Pure short-horns were put to pure short-horns, the sort varying each generation; no attempt to keep families at all distinct seems to have been even contemplated by the breeders. This is the case in a great number of herds. Sometimes the parents, unrelated in derivation but alike in type, are brought together wisely by men who know what they are about. It is but an *experiment* when two strange kinds are united, yet one that may be tried with few failures if the experimenter possesses the knowledge, the power of observation, and the instinctive appreciation of fitness, indispensable to certain success in stockbreeding. Thus we find sometimes pedigrees seemingly heterogeneous resulting in animals of uncommon worth, possessing the marked character more frequently indicative of descent from an established family derived from kindred sources; but there is another explanation of the up-starting of prize-winners where least expected, and that explanation may be summarised in the word *accident*. Not that in stock-breeding good can come out of unmitigated bad, or something out of nothing; but there is good, more or less remote, in every strain of Herd Book short-horns; and what is called a "lucky hit" may cause the re-expression of qualities long hidden.

We understand that Mr. Richard Gibson, London, Ontario, landed his sheep safely, while Mr. Miller was a loser, as also was Mr. Snell.

### To Fatten a Poor Horse.

An exchange says;—Many good horses devour large quantities of grain or hay, and still continue thin and poor, the food eaten is not properly assimilated. If the usual food has been unground grain and hay, nothing but a change will effect any desirable alteration in the appearance of the animal. In case oatmeal can not be obtained readily, mingle a bushel of flax seed with a bushel of barley, one of oats, and another bushel of Indian corn, and let it be ground into fine meal. This will be a fair proportion for all his food. ~~or~~ the meal, or the barley oats and corn, in equal quantities, may first be procured, and one fourth part of oil cake mingled with it, when the meal is sprinkled on cut food. Feed two or three quarts of the mixture two or three times daily, mingle with a peck of cut hay and straw. If the horse will eat that greedily, let the quantity be gradually increased until he will eat four to six quarts at every feeding, three times a day. So long as the animal will eat this allowance, the quantity may be increased a little every day. But avoid the practice of allowing a horse to stand at a rack well filled with hay. In order to fatten a horse [that has run down in flesh, the groom should be very particular to feed the animal no more than he will eat up clean and lick the manger for more.

### Meeting of Short-horn Breeders.

A meeting of Kentucky Short-horn breeders took place August 21st, at the office of the Farmer's Home Journal, Lexington, in pursuance of the call already noticed in our columns. The following gentlemen were present: A. D. Offutt, Scott, Chairman; Ben. F. Vanmeter, Clark, Secretary; W. T. Hughes, Wm. Warfield, Ben. W. Smith, W. R. Estill, Jas. Farr, P. C. Kidd and W. B. Kinkead, Fayette; A. J. Alexander, Woodford; Thos. Corwine, Pendleton; Wm. H. Graves, Scott; Jas. Hall and G. M. Bedford, Bourbon, W. W. Goddard, Mercer; Dr. W. Cunningham, W. C. Vanmeter and A. Renwick, Clark. After considerable discussion, the following resolution, introduced by Mr. W. Warfield was unanimously adopted.

*Resolved*, That this meeting cordially approves the call for a National Convention of Short-Horn Breeders, and to more fully carry out that view, suggest that a State Convention of the Short-Horn Breeders of Kentucky be called to meet at the Court House in Lexington, September 19th, at 12 o'clock M., to appoint delegates to the National Convention.

A committee was appointed, consisting of Messrs. Hughes, Kinkead and Kinnaird, with instructions to prepare suitable resolutions for presentation to the State Convention. The consideration of the Short-Horn Herd-Book was deferred.



The Supplies of Stock

In 1881 and subsequent very dry years the scarcity of grass and other stock food obliged the breeders to sacrifice their stock at ruinous prices, thus diminishing their capital and discouraging the breeding of stock. It is to be hoped and expected that the present very high prices of lean and fat stock will greatly stimulate increased stock-breeding. The increase of population and industrial prosperity cause a greater demand for animal food, and a consequent rise in price. I do not think that meat will be cheaper for some years to come. I have always had an opinion that we do not, as farmers, make meat enough, and it is evident that with so vast an extent of grass land (half of the kingdom), much of it very poor, we shall be often subject to the evils arising from dry seasons on permanent pastures. An ample and more certain supply of stock food can be produced on arable land by growing winter and spring beans, clover, winter tares, Italian rye-grass, mangle, turnips and cabbage, and winter oats, all available for animal consumption. By the use of cake and foreign corn, with cut straw, &c., much meat may be made. All this requires a greater acreable capital than is generally invested.—J. J. Mead, in *Markham Express*.

Weaning Lambs.

It is very frequently the case that lambs are let run with their dams too long, which has an injurious effect upon both. So long as they run together, the lamb will depend on the milk drawn from its mother for sustenance, which often does not amount to much, consequently, both are the worse for not being separated. Persons who have had large experience in sheep-raising generally agree that four months is the proper age to wean lambs of all breeds.

An idea prevails to a considerable extent that it will not do to separate lambs from the ewes in "dog days." This is all fudge, and the sooner superstitious ideas are abandoned the better; provide good pasture and give them good care, is the all important consideration. When separated the lambs should be put so far apart that they will not be in hearing of each other, as this causes them to be restless and uneasy.

Do not turn the lambs on fresh clover pasture, as it is certain to cause souring and other ailments; good timothy and blue grass is the best, but it should not be very long. As soon as pasture begins to fail, or at least so soon as the first frosts have touched the grass, a little extra feed of some sort should be given. Oats and bran mixed together make a nice feed to begin with, and a little salt added to it will give them more of a relish for it; rye also makes a first rate feed for them, but it is not quite so well polished; corn makes an excellent winter feed but care should be taken at first not to feed too much

at a time. It is best to put a few old tame sheep with the lambs to teach them how to come when called.

The ewes should be put on the driest pasture on the farm for a few days to assist in drying up the milk, and it may be found necessary to milk some of them a time or two.

Should cold rains prevail during the early fall months, lambs should be put under shelter, and have some hay given them in the racks; and as the season advances they should be kept in of nights. By doing this, by the time winter sets in, they will be so taught to eat that the change from pasture to dry feed will not be perceptible.

It will not require a person to keep sheep many years until he will find out that the main thing in wintering them is to keep them up in the fall, for if permitted to lose flesh then they will not recruit up again during the entire winter, more especially is this the case with lambs.—*Agricultural Companion*

Selecting Calves for Milkers.

A writer in one of our exchanges says: "The points that indicate the good cow are discernable in the calf, and why not? This may stagger some dairymen, but that is just what we wish to do. This wholesale slaughter of calves in the spring is wrong. A calf will show a good milk mirror, as well as a cow, and a rich cream colored udder as well as a cow, a healthy, thrifty looking and strong loin as well as a cow. And these points make up the cow every time. Let the breed be what it may, this is our experience in the matter. A calf that is worth ten or fifteen dollars should not be killed for its mere hide, for the lack of judgement in selecting."

Sale of Shropshire Sheep at Atherton.

The sale of the Shropshire ewes and rams, to be given to Mr. W. P. Baker, of Atherton, on Wednesday, the 10th inst. by Messrs. Lythall and Clarke of Birmingham. There were thirty-six lots of rams submitted and after a good competition they were all sold off at remarkably good prices, the average being £17. 13s. 6d. Among the highest priced lots were a pair of the Reflection and Perfection pedigree, which sold to Mr. Rose for 63 guineas. Another lot by Reflection and Monarch went to Mr. Bennett for 35 guineas; while the same gentleman secured the shearling ram (Chance for a similar figure. Two other lots sold for 30 guineas and 33 guineas respectively, and others were disposed of at 20 and 15 guineas. The lettings were Charley to Mr. Lightfoot for 17 guineas; Valentine, to Mr. Marston, at 25 guineas; Rocket, to Mr. Atkin, for 15 guineas, and Flash, to Mr. Princess, for 15 guineas. The ewes averaged 101s. each.

Foot and Mouth Disease in England

The following is a list of the counties to be interrupted by the disease.

The accounts from all parts are most disheartening. From 2,000 out of the 10,000 in Shropshire, during the first week of August, there were reported 10,748 animals prostrated by this disease, while in Gloucestershire this number is exceeded by 2,000 and in Dorset and Cambridge the mortality has assumed a most virulent type, and is spreading to almost every district in the country.

The "Fetor" says: From Northamptonshire, Lincolnshire, Nottinghamshire and Lancashire, equally depressing accounts are received, notwithstanding the most rigid precautions on the part of the local authorities. Norfolk seems to suffer even more severely from the disease than any county in England, the last return showing a total number of 15,631. The accounts from Scotland are not quite so alarming, but several fresh outbreaks have taken place during the week. The truly deplorable state of our stock would almost justify the Privy Council in adopting severer measures than have hitherto been put in force.

Short Horns preferable to Jerseys.

A correspondent of the *Boston Cultivator* having written recently in favour of the Jerseys, Mr. Nathan Talbot, of Rome makes the following reply:

Having had some experience with the Jersey cow compared with the Short Horn, to satisfy myself which was better for the farmer to keep, I have given the Short Horn a decided preference for the following reasons, viz:

1. That the Jersey Cow does not uniformly in the same degree give a better milk than some families of Short Horns, as tested in my dairy. I have had fat blood Short Horn cows that in the same pasture with pure Jersey cows, have produced that would form the same amount of milk as with the Jersey and still as heavy as the Jersey, while they would give a very decided quantity of milk, that has a great difference in favor of the Short Horn, in my estimation.

2. In the districts where milk is carried to the cheese factories, the cow that will give thirty or forty pounds of milk a day is of much more value to the dairy farmers than one that does not give more than half that amount, as ten pounds is an average of milk taken for one pound of cheese in all good factories that are well managed by a good cheese maker.

Francis Rotch told the writer that the first Short Horn cow he had on his farm made 17½ pounds of butter in a week on grass alone, in trial; that they are good milkers among the Short Horns and that these properties

can be found as well in that race of cattle as any other. I will mention a single family; In purchasing a heifer of Mr. Rotch, he told me she was from his best family of cows. In breeding her to the imported bull Marquis of Carabras (11789) the production was a heifer, dropped in 1856. She is now in my herd and a regular breeder. Her usual yield of milk in good feed has been an average of 40 pounds per day. She was bred to Echo of Oxford, (1500.) The product is a heifer whose daily yield has averaged 45 pounds, frequently giving 50 pounds in the flush of feed.—She was then bred to Lord Oxford, (3091.) The product was a heifer that has been fully equal as a dairy cow to her half sister. She was then bred to Ellsworth, (4780.) The produce also a heifer that has given more milk than either of the others, thus showing conclusively to me that good milking qualities can be improved and perpetuated in Short Horns, and after trial of a score of years, am fully of the opinion that the Short Horns can be bred to produce as much and as good milk as any race of cattle and when dry, will fatten as easy as any other breed, and furnish a large amount of beef of fine quality; the cows mentioned in this family have all had finely formed bags, with large handsome teats, and with one exception, are now in my herd, although now they are old cows, they are kept for their superior excellence for the dairy.

Let me state some of the defects of the Jerseys. They are very likely to have small teats, and to milk very slowly, frequently taking twice as long to milk them, by a good milker, as it does a cow with good teats, that gives double the quantity they do; then their milk is not uniformly of the richest quality, as I have been frequently told by their owners that there is a vast difference in quality as well as quantity, and that in selecting, there is as much need of care in selecting the Jerseys as in any other breed. They are very liable to be vicious in both bull and cow, bulls particularly so. Francis Rotch told the writer, a few years since, that their wild disposition was a great drawback to them as farm stock; also, that if a man wanted a cow for family use, unless his family was small, the Jersey cow would not give milk enough, and few persons knew then, or do now know better than Mr. Rotch about the Jerseys; but all are not as honest to tell the truth about them as he was to me, as I was in pursuit of some females of the breed, when he gave me the information.

The Jersey is a very tender animal, and must have the richest feed to keep her in fair condition as a dairy cow, and that is one great secret of the richness of her milk. I have known them tried as family cows in several instances, and disposed of because they did not fill the bill.

The writer served as one of the judges on Jerseys last fall at our country fair, and inquiring about the milking properties of a Jersey from a noted herd, the owners said in reply to

the question, how much milk does she give to a milking? "About as much as a man can drink at once." All the Jerseys shown had very small short teats, and that is one great defect in the Jersey cow for the dairy. In the trial I have given the Jersey cow with the Short Horn, in my own dairy, and from all information I have been able to get from Jersey breeders, I have come fully to the conclusion that the Short Horn must be the better cow for the dairy, either as a grade or full blood, and when she is disposed of for beef, I have sold some at \$100 and upward, which is no mean sum for a cow when her milking days are over, and she is sent to the butcher's shop, the destiny of all races of meat cattle.

### Record of Stock Sales.

#### "BOOTH" SALE

On the last day of August, the short-horn herd of Mr. T. Bracewell, Preston, Lancashire, England, was sold by auction.

Unfortunately, the foot-and-mouth disease had broken out a few days previously in the herd, so that, as the animals were put up on the sole condition that they should be retained by Mr. B. until he could give a qualified veterinary certificate of each individual's perfect health, the bidding was little affected.

The sale went as follows:—

23 cows, average	£32 14 9d.	Total	£1,911 0-
8 bulls	108 10 0		84 12
31 head	£187 04 9d		£2,742 12-

#### "BATES" SALE.

Lord Dunmore, on 5th September, sold off a number of cattle, all Bates, showing in prices that, after all, value of high bred short-horns depends more on the intrinsic worth of the individual animal, than upon Booth, Bates or other family blood.

The official returns of this remarkably successful sale are as follows:—

#### SUMMARY

48 cows, average	£23 10s 0d	Total	£1,120 3s.
6 bulls	167 8 6		938 11
54 head	£181 18s 6d		£1,118 14s.

Of the bulls, the highest price, 400 gs., was for Baron Oxford 5th, two years old, a grandson of 3d Duke of Thorndale, through his dam, Lady Oxford 5th.

Oxford Duchess, red and white, calved July 2, 1871, by 6th Duke of Geneva, dam 11th Lady of Oxford by Baron of Oxford (23371)—Mr. R. Pavin Davies Gloucestershire, 1,200 gs.

Marchioness of Oxford, roan, calved January 21, 1871, by 4th Duke of Geneva, dam 8th Maid of Oxford by 2nd Duke of Geneva (22752)—Mr. R. Pavin Davies, 1,010 gs.

Marchioness of Oxford II, red and white, calved February 6, 1872, by 6th Duke of Geneva, dam 8th Maid of Oxford by 2d Duke of Geneva (23752)—Mr. W. Angerstein, 860 gs.

Lady Thorndale Bates II, roan, calved October 26, 1869, by 4th Duke of Thorndale (17750), dam Lady Bates 3d by 4th Duke of Oxford (11387)—Earl of Bective, 805 gs.

Cherry Princess, roan, calved April 2, 1870, by General Napier (24023), dam cherry Duchess 8th by 3rd Grand Duke (16182)—Earl of Bective, 805 gs.

Marchioness III, roan, calved July 21, 1870, by Duke of Collingham (23730), dam Siddington 1st by 4th Duke of Oxford (11387)—Earl of Bective, 535 gs.

Bright Eyes II, red, calved August 1, 1865, by Royal Butterfly 3d (18754), dam Bonny by Oxford Duke (15036)—Mr. H. Brassey, Kent, 530 gs.

Siddington VII, light roan, calved October 9, 1868, by 7th Duke of York (17754), dam Siddington 3d by 7th Duke of York (17784)—Earl of Bective, 500 gs.

Marchioness II, roan, calved June 21, 1870, by 2d Duke of Collingham (23730), dam Kirklevington 12th by 4th Duke of Oxford (11387)—Earl of Bective, 455 gs.

Lady Bright Eyes III, roan, calved May 12, 1871, by 7th Duke of York (17754), dam Bright Eyes 2d by Royal Butterfly 3d (18754)—Duke of Devonshire, 375 gs.

Lady Bright Eyes I, roan, calved August 24, 1868, by General Napier (24023), dam Bright Eyes 2d by Royal Butterfly 3d (18754)—Mr. H. Brassey, 360 gs.

The part of the Dunmore herd not offered at the present sale comprised the Earl's American importations, one or two favourite old cows, and a tribe known as the Reverbs—22 head in all; and *Bell's Messenger* states that previous to the sale the sum of £15,000 was unsuccessfully offered for these animals in one lot—also that after the sale two of them were sold, Red Rose 2d and Red Rose 3d, for 2,000 guineas.

### The Brant Short-Horn Sales.

The sales of thorough-bred short-horns at the Plains and at Bow Park came off on Wednesday and Thursday, as announced, and were very successful.

Mr. Christie's sale, from the length of time his herd has been established, and the widespread reputation of some of the animals included in it, attracted from across the lines a number of American buyers, and on not a few of the lots the bidding was very spirited. The weather was exceedingly fine; the cattle, though not in high condition, were seen on the grass lawn to great advantage; and a better company never assembled at a short-horn sale in Canada. Twenty-eight cows and heifers were sold, for an average of close on \$300—the highest price attained being \$675, for *Rose of Summer*, and the lowest \$100, for *Beauty*. The sale of *Knight of St. George*, a pure Booth bull, bred by Mr. Carr, of Stackhouse, and imported by Mr. Christie five years ago, was the grand event of the sale. The bidding began at \$300, and ran rapidly

up to \$1,000, when the fight became a three-cornered one, and was finally won by the agent of the Honourable Samuel Campbell, of New York Mills, New York, at \$1,235. A number of other bulls were disposed of at prices ranging from \$85 to \$305. The sale wound up with a lot of Cotswold and Leicester sheep. The buyers were chiefly from the United States—Mr. Hyde, of Ross county, Ohio, Mr. Grimes, from Ohio, Mr. Wood, from Nebraska, Mr. Campbell, of New York Mills, and Mr. Bates, of Oswego county, N. Y., carrying off a very large proportion of the animals sold.

Mr. Brown's sale at Bow Park came off on Thursday, under the heavy disadvantage of a continuous pour of rain during the whole day. The attendance, however, was very good under the circumstances; and though the audience had to seek shelter under the implement shed, and the auctioneer had to perform his duties with the crowd pressing around him, a large number of animals were disposed of at good prices. The buyers were principally Canadians, among them being Mr. Clemens, M.P.P., of Waterloo; Mr. John Miller, of Pickering; Mr. J. I. Smith, M.P.P., of Ailsa Craig; Mr. John C. Snell, of Edmonton; Mr. James I. Davidson, of West Whitby; Mr. Stephen Moffat, of Galt; Mr. John Jackson, of Goldstone; Mr. Robert Milner, of Pickering; Mr. Malcolm McTaggart, of Clinton; Mr. John Phin, of Hespeler; Mr. Aitchison, of Guelph; Mr. Francis Horner, of Princeton; Mr. John Weir, jr., of West Flamboro'; Mr. James Cowan, of Guelph, Mr. F. Yorst, of Hanover, Mr. David Stevenson, of Bentinck, Mr. J. M. Kennedy, of Richwood, Mr. Stephen Palmer, of Mount Vernon, Mr. Main, of West Flamborough, Mr. John Millers, of Buckthorn, and other well-known breeders. Mr. Wm. Fairbairn, of Carson City, Nevada, and the Hon. Samuel Campbell, of New York Mills, N. Y., were also the purchasers of several lots. Forty-three lots were disposed of in all. The bull calves ranged from \$70 to \$220, and averaged about \$140. The heifers ranged from \$105 to \$310, and averaged a little over \$180. The Berkshire pigs ranged from \$17.50 to \$52, and averaged \$39.

Mr. Strickland of Galt discharged the duties of auctioneer at both sales, and received high commendation for the admirable manner in which he did it.

Mr. David Roesor, Jr., Markham, returned from England Aug. 1. with one bull and four heifers—Short-Horns—seven Clydesdale colts and fillies, one beautiful Shetland pony, stallion, and some Cotswold sheep.

Wool Product of the World.

In the following table will be found a near approximate estimates of the number of pounds of wool annually produced in the different countries of the world, from the most reliable information obtainable:

	Pounds of Wool
Asia, including Russia in Asia	320,000,000
Great Britain and Ireland	260,000,000
Germany, Netherlands and Belgium	198,000,000
United States	130,000,000
Australia	130,000,000
France	126,000,000
European Russia	125,000,000
South America	110,000,000
Asiatic Turkey	100,000,000
Spain	62,000,000
Persia	50,000,000
North Africa	50,000,000
European Turkey	42,000,000
Italy	40,000,000
Cape of Good Hope	20,000,000
Portugal	17,000,000
Canada	12,000,000
Sweden and Norway	11,000,000
Greece	8,000,000
Denmark	3,800,000
Switzerland	3,000,000
New Mexico	500,000
<b>Total</b>	<b>1,818,360,000</b>

There are other countries that produce considerable quantities of wool, but as they export little or none, it is not brought into the account.

The London *Agricultural Gazette* says that Mr. Olver's celebrated cow, Grand Duchess 17th, has just produced a strong, healthy red bull calf, by Colonel Kingscote's Duke of Hillhurst. "Her last calf was also a bull, and was sold on reaching his twelfth month for the sum of 1,200 gs. Mr. McIntosh's Grand Duchess 21st has also calved a roan bull calf, by the 3d Duke of Geneva, and it is said there has been quite a fall of heifer calves lately in the River Park Herd."

CALL FOR A NATIONAL CONVENTION.—A majority of the breeders addressed in relation to the resolutions adopted by the Indiana State Convention of Short-Horn Breeders, suggesting the propriety and importance of holding a National Convention, having responded favorably thereto, and most cordially approved of the above mentioned resolutions, the committee appointed and authorized by the Indiana State Convention for such purpose, feel warranted in issuing a call for such convention.

Therefore we do name and select, from its central position, railroad facilities, and a preference expressed by the majority of breeders heard from, Indianapolis as the place, and Wednesday, November 27th, 1872, the time, for the assembling of a National Convention of the Short-Horn breeders of the United States and Canada. And we further trust that all breeders will exert themselves to attend this convention, since we cannot doubt it will be of great interest and importance to all.

CLAUDE MATTHEWS,  
GEN. SOL. MEREDITH,  
J. G. KINGSBURY, } Committee.

Veterinary Department.

Chronic Diseases of the Respiratory Organs of the Horse.

HEAVES OR BROKEN-WIND.

Broken-wind is a disease that prevails to a very great extent amongst the horses of this country, and although not of a fatal character, it greatly impairs the usefulness of an animal, and materially depreciates his marketable value.

As regards the pathology or true nature of this complaint, a number of theories have been brought forward, and unphlysema of the lungs has long been looked upon as the origin of the distressing symptoms, but the real cause or nature of this disease we believe is impaired nervous influence.

The lungs and stomach are largely supplied with nervous influence by means of a great nerve, (pneumogastive), which is liberally distributed to these parts, and when the great centre of digestion becomes affected through injudicious feeding, it necessarily impairs the nervous force.

The great excitement therefore of broken-wind is partial or impaired digestion.

In farm horses how often do we see it follow the continued use of dusty clover hay, chopped food, &c., which abnormally distends the stomach and bowels, and affects the nervous power.

We have often known of young horses healthy in every respect, turned into the barn-yard for the winter months, and fed on inferior hay, pea straw, &c., and in the spring were found to be suffering from broken-wind, yet had never exhibited any appearance of organic disease of the lungs.

It occasionally, however, results from other causes, as a sequel of severe cases of strangles or follows a prolonged attack of inflammation of the lungs.

This troublesome complaint would be of less frequent occurrence if proper care was exercised in the feeding of horses; by giving nutritious food in moderate quantities, and at regular intervals, and by not subjecting horses to rapid exercise when the stomach is too much distended.

Broken-wind is rarely seen in cavalry, hunting horses, &c., and their freedom from it is entirely due to the regular and careful mode of feeding.

Broken-wind is an affection that is usually easily detected, and the distressing symptoms are increased by sudden changes of temperature. The heaving or quick lifting of the flanks is readily noticed after sharp exercise, the inspiratory movement is quickly performed, whilst respiration takes place slowly, another characteristic symptom is a prolonged and hacking cough, easily excited by pressure on the larynx, or sudden changes of food or temperature when the disease is confirmed it becomes altogether incurable; but the very worst of cases can be benefited

and the distressing symptoms relieved by proper attention to feeding, regular exercise with an occasional dose of laxative medicine.

There are certain medicines as various kinds of sedatives which temporarily relieve the breathing, but all powerful drugs must be used with caution. The iodide of potassium, or the bicarbonate of potash in drachm doses morning and night will frequently give great relief.

Horses affected with heaves are sometimes severely drugged for the purpose of deception when exposed for sale, where such is suspected to be the case, the horse should be given a good drink of water, or allowed to eat a few pounds of hay, and then subjected to rapid exercise when the true nature of his complaint may be easily detected.

### Heart Disease.

CASE BY A. M. CAMPBELL, V. S., YARBA.

To the Editor.

DEAR SIR,—I would consider it a great favor if you would permit me through the columns of your valuable journal, to say a few words on a disease which is comparatively rare amongst the equine species, viz. :—Disease of the heart. A few weeks ago I was called to see a mare which had been showing signs of weakness for some time. On entering the stable I was struck by her languid appearance, placing my finger upon the sub-maxillary artery I found the pulse very weak and running about 90 beats per minute, auscultation revealed a blowing sound instead of the regular beating of the heart, venous pulsation quite plain in the jugular, respiration slightly accelerated, appetite impaired and extremities cold. After diagnosing the disease, my prognosis was of course, unfavourable. A few days afterwards she died very suddenly, on post mortem examination I found a fatty tumour in the left auricle almost filling it, passing through the auriculo-ventricular opening into the left ventricle and occupying a large portion of this cavity.

### Swollen Udder in a Cow.

To the Editor.

SIR—I have a cow, one side of whose bag swells periodically, and while in that state she gives thick milk from those teats. I thought perhaps her bag got hurt, so I put her where she could not hurt it, but still the same side remained swollen, and she still continued to give thick milk.

If you can throw any light on the matter you will greatly oblige  
Kinburn.

SCHOOLMASTER.

Swelling of the udder probably results from exposure to cold or wet, or from injury, and if the excreta are kept up, the functions of the gland may be completely destroyed.

We would recommend the swollen parts to be bathed with tepid water daily, and afterwards rubbed with a common soap liment, and give internally two drams of the extract of Potash daily, and continue the medicine for eight days.

## The Dairy.

### How Water and Cold Influence the Flow of Milk.

We have called attention, from time to time, to some of the causes which operate injuriously on milk cows in lessening the flow of milk—such as cold, fatigue, excitement, &c., &c. The *Boston Journal of Chemistry* gives an account of the loss of milk on account of the cows being allowed to stand in water during hot weather. Dairymen who have streams, or any considerable body of water connected with their pastures, will have observed that cattle, during hot weather, are very fond of taking "their daily bath," so to speak. They will not unfrequently stand for a considerable time in the water, sometimes with the water up to their sides. We presume this is done many times by animals to avoid the annoyance of flies, but whatever cause leads them to stand in the stream or pool, it seems the influence of the water is to check the flow of milk. The facts stated are as follows:

"During the past summer, in the hot days of July and August, the animals resorted to the lake to drink, and, after slaking their thirst, they would wade into the water and remain sometimes for an hour or two with the legs half immersed. This habit it was found invariably diminished the flow of milk at night, and, in order to learn the extent of the diminution, observations were made. It was ascertained that standing in the water an hour diminished the flow to the amount of eight or ten quarts in a herd of thirteen cows. The loss was so great that whenever they resorted to the water they were driven away to pasture again at once."

We presume there are few dairymen who are aware of the facts above stated; in fact, the habit of noting the diminishing flow of milk and tracing it to its true cause is to generally neglected. There are many circumstances influencing the flow of milk which ought to be more generally known and made the basis of practical management. It is surprising how much more milk may be obtained from a herd by the observance of care in little things as respects treatment, such as the avoidance of all worry or excitement of the cows, proper shelter during cold storms, habits of kindness to animals, regular hours and manner of milking,—not to mention food, and good water to slake the thirst, which of course are more generally recognized by every one who is familiar with the handling of dairy stock.

"We have learned," says the writer previously quoted, "that from simply turning the herd into the yard upon a cold day in winter and allowing them to remain fifteen minutes, the flow of milk was diminished to a serious extent, and consequently the animals were not allowed to leave the warm stable during the entire winter, except for a brief period

upon warm, sunshiny days. Water is brought directly from a well into the barn, and the drinking vessels are arranged so that the animals have to move but a step or two to supply their wants. The nature of the water supply and the convenience of access are most important points in the management of milk cows. A draft of ice cold water taken by a cow in winter cuts short the supply of milk from one to two pints."

We think it was Mr. Jamieson, of New Hampshire, who, a few years ago, made some direct experiments during winter in slightly warming the water for his cows in milk, and comparing the yield with the quantity of milk when the cows were allowed to drink cold water from the trough in the yard. The flow of milk was so decidedly in favor of the warm drink that he advocated the plan as more than paying for the labor, &c. Probably there are not many who would care to take the trouble of warming all the water for the supply of a large herd in cold weather, but the facts are nevertheless important. If it has been found that cows will give more milk in cold weather by warming their water artificially, dairymen might take the hint that it would pay to lead water into their barns, or to erect some structure over the water trough where the water would be protected from snow and ice, and thus rendered several degrees warmer than the ice cold water with which they are usually supplied during February and March, when cows are coming in milk.—K. A. Willard, in *Rural New Yorker*.

### Keeping Butter for a Long Period.

Some time since we gave an illustration of a new method of packing butter to keep for long periods. It is the invention of Charles H. White, of White's station, Michigan, and consists in putting the butter in a sack fitted to a peculiar shaped tub and so arranged that when the packing is completed and the tub turned so as to rest on the large end the butter will drop down an inch or so, leaving a clear space between the tub and butter. Strong brine is now forced through a hole in the small end of the tub, to fill this completely. The brine floats the butter and wholly surrounds it, excluding the air. The orifice is then closed up and the butter set away in cool place. The invention seems to us to have very great merit, and we determined to test it practically. Mr. White, therefore in September last, furnished us a tub of butter which arrived during very hot weather, which we consider favorable for a thorough test, especially as it had stood in the express office a couple of days, exposed to the sun before we were notified of its arrival. The tub was then taken and set aside in the cellar, where it remained until July 13th, 1872, when it was opened, but we found the butter sound and apparently in as good order as when first packed—ten months and a-half previously.

From this test we are inclined to think that with proper attention from time to time in supplying brine as it evaporates, butter may be kept two years or more in good order by this method. If all the butter sent to market were put up in this way, the risk of handling would be vastly lessened; and for family use, when the butter is not needed for immediate consumption, the plan of packing is to be highly recommended.

Another important feature in these packages is, the butter may be lifted by the sack entirely out of the tub, the end of the sack turned down and the butter cut in desirable shape for the table. The cutting of butter being taken off as desired, the sack with that which remains is lifted back into the tub and thus treated alternately until the whole is consumed. In the old way of packing it is quite difficult to cut the butter from the tub in good shape for the table. It is not unfrequently in ragged and unsightly lumps, but with the White package the cutting may be made very neat and shapely.—*Rural New Yorker.*

**Factory System in England.**

A correspondent of the *Utica Herald* writes:—touching cheese making, in which you take a worthy interest, I may mention that the prospect of a rapid spread of factories in England is not yet very bright. The two which were opened in Derbyshire, two years ago, under the auspices of a guarantee fund, are now standing on their own merits. The question was available for three years, but the patrons have voluntarily liberated the guarantee from the third year of their responsibility. This is a good sign. The present season is the crucial test of the factory system in this country, and on the manner in which it is passed depends, to a great extent, the future of English cheese-making. The accounts of the two factories for the past season are not yet published. About Christmas the case then disposed of from the Derby factory (which was managed by Mr. Cornelius Schermerhorn, of North Gage) averaged 14½ cents per pound, gold; while home-made cheese in Derbyshire will reach an average of about 12 cents. So far, so good.

**A Suggestion to Butter-Makers.**

A correspondent of the *Country Gentleman* renews a suggestion that farmers who keep a few cows, making butter for neighboring markets have their cows come in early in the fall, thus having the main yield of milk at a time when butter commands a good price, and also avoiding the trouble of butter making in hot weather. Another advantage claimed is that in the hot weather will be a better time for the cows to recuperate their strength. To make this plan successful provision must be made to feed liberally in fall, winter, and early spring.

**Yield of Milk—Value of First Class Stock.**

Mr. Joseph A. Howe of Methuen, Mass., in an address before the Essex Co. Agricultural Society, puts the average annual yield of milk in this country at 1800 quarts per cow, while he thought those of Essex Co. would reach 2000 quarts. And then, to show the comparative merits of common and first class milkers, he gave an item of his own experience:

"I selected three cows from my herd, one of which had been kept upon the place several seasons and was thought to be fully an average cow; the other two were superior. The quantity of milk produced by each was carefully noted each week for a year. The result showed that, while the average cow produced only 2100 quarts per year, one of the others produced 3100, and the other 3500 quarts in the same time. There was no perceptible difference in the cost of keeping. \* \* \* Any farmer who can procure a herd of such cows can make money by them.

"There is no doubt," he continues; "but that the production of such stock is entirely within the range of possibility. \* \* \* The farmer cannot go into the market and purchase it, because such cattle are the exception, and those who own them do not often offer them for sale. We must raise it ourselves."

Since the above extract appeared in the *New England Farmer*, a later number, August 4, which contains a communication from the owner of the Maplewood herd (Mr. E. T. Miles of Fitchburg) giving the average yield of that herd (Ayrshires) for the three years ending July 1st, 1872, as follows:

7 cows in 1869-70	gave an average of	3910	quarts.
8 do. 1870-71	do. do.	2884	do.
10 do. 1871-72	do. do.	2769	do.

Mr. Miles adds: It will be observed that all the milking stock of the herd is included—cows that have passed their prime, as well as heifers not arrived at maturity. Three cows gave in the three years an average of 3447, 3215 and 3337 quarts of milk each per year. One cow (Beauty, No 240) gave 3828, 3795 and 3619 quarts of milk per year for the three years.

In order that farmers may supply themselves with cows that will average 3000 quarts of milk per annum, Mr. Miles says all that is necessary is to buy an Ayrshire bull, "and breed native, grade, Devon and short-horn cows or heifers to him, and you will be reasonably sure that in a few years you will have a herd that will yield you a milk to the desired quantity."

In February last he found that 24½ pounds of milk from his Ayrshires made one pound of butter on the average. A herd of high grade short-horns, owned by Mr. J. T. Ellsworth, during eleven months averaged one pound of butter to 24 85-100 pounds of milk.

In offering premiums for the best average of milk, Mr. Miles thinks the average should be for the whole year, instead of two months, as is required by the New England Agricultural Society.—*Exchange.*

**How many Pounds of Milk does it require to make a Pound of Cheese.**

(To the Editor.)

Please inform me through your sheet devoted to Farmers, how many pounds of milk it takes to make a pound of cheese, factory made, as I have had an argument on it.

East Whitley. A. S. BOORDER.

Our Correspondent's query, like many others, cannot be answered absolutely, so much in the yield of cheese from given quantities of milk depending upon different circumstances; the quantities may however be said to vary from 8½ to 11½ lbs. of milk to one pound of cheese. A factory that does not average over 10 lbs. milk to one lb. cheese throughout the year, does well. In the spring it is usual to take from 9 to 10 lbs. in the summer from 10 to 11½ lbs.; as the weather gets cooler and cows fall off in milk, less weight of milk will do until you get down to 8½ lbs., and late in autumn we believe a lb. of cheese has been made from 8½ lbs. of milk.

Then again, it depends a great deal upon the milk; an old cow's or stripper's milk is better than that of a young or fresh-calved cow.

One great reason why it is difficult for a factory to average a pound of cheese from ten of milk is that they are likely to get the most milk at a time worst adapted for making cheese—in which case it is just an impossibility to make the above average. Again, Farmers are apt to know which are their best butter cows and keep that milk back.

A Factory, to show a good return, should have milk for at least seven months, and have all the cows to come in at the same time, and early, so as to get a good start, and the use of each while she is at her best, and before the hot weather sets in, thus to get the cheese early in market, command the best price, and have it sold before the flies become troublesome. It is well known that early made cheese cures faster, with less risk and at less expense, than late in the season, at which time you are obliged to have a fire and incur other expenses.

W. C. J.

**To Purify Milk Pans.**

Place in a convenient position a vessel of suitable dimensions for the size of the dairy, from a half barrel to a hoghead. In this slake quicklime, enough to make a thin whitewash when full of water, and cover to keep out dust and dirt. The lime will settle, leaving a solution of lime over it, as clear as spring water. After using the milk pans, etc. wash them as other utensils are washed and rinsed; then dip them in the adjoining cask of lime water, so that every part becomes immersed therein; set them to drain and dry, and the purification is complete.

## Poultry Yard.

### The Production of Eggs

Among the various objects worthy to command the breeder's best efforts is one which considering its special utility, seems to have less attention than it demands. We refer to breeding with reference to the increased production of eggs.

Our highly bred and prize fowls while they excel in many respects, incline, in the case of some breeds at least, to produce fewer and less fertile eggs than their less pretentious neighbors. Nor can we wonder at it; for our poultry breeders, in their eagerness to please the eye, sacrifice the more useful qualities to beauty, grace, or other fancy points. No more can we expect to find a fowl possessed of every desirable quality than we can calculate on beauty and brilliancy accompanying each other in the human subject.

Now, if the above remarks are true we are gaining a good thing by losing a better thing; we are "robbing Peter to pay Paul," and this evil tendency must be checked.

The remedy is simple. In selecting birds for breeding stock, accept only such as compare favorably, as layers, with other birds of the same variety, and reject poor or indifferent layers, no matter how fine they may be in some other respects. In the next place let our Poultry Societies require of exhibitors that they furnish a correct report as to the fecundity of the stock shown, and instruct the judges to give some consideration, however slight, to this matter. Such a course of action would do much toward raising pure bred poultry to a higher standard of utility than they have yet attained.

Besides the selection of extra layers to breed from, there are one or two tricks of the trade to which we may resort in order to promote the laying of eggs; such as removing two or three times a day the eggs already laid. In their undomesticated state fowls lay, at each litter, only so many eggs as can be safely covered and kept at the required temperature; but if all the eggs except one or two for nest eggs, be removed, taking pains not to disturb the birds and the nest, then nature tries to compensate the loss, and make up the original number.

A case in point came to our notice not long since. A golden winged woodpecker prepared her nest and laid her full number, eight in all. Seven of the eggs were then quickly removed, and the next day she laid another egg. Each day an egg was laid and an egg removed, until the poor bird had produced no less than twenty-four eggs at a litter, or just three times as many as she would have laid if left to herself.

Farmers will know that when a hen steals her nest she seldom lays more than fifteen

eggs before she begins to sit; yet when laying in the hole, the eggs being removed each day, four times that number are frequently laid in one litter. We conclude, therefore, that the production of eggs is to some extent voluntary, and that fowls incline to adapt themselves to circumstances; so while we would not wish to lose sight of the fancy points already attained, we trust breeders will endeavor to surround their breeding stock with such circumstances as are calculated to encourage the increased production of eggs.—Charles L. Palmer, in *Poultry World*

The fall and winter are the times in which to weed out old stock

### Imported Cochins

Mr. G. M. Thomas, of Brooklyn, writes: "I have just received from Henry Tomlinson, Birmingham, England another crop of most wonderful, nice buff and white Cochins here. They arrived in fine condition, there being not a feather soiled or ruffled on them. They are already laying. Mr. Tomlinson, very kindly, at my request, sent them in large coops, which gave them far more room than the last ones I sent me, and which had come in very bad condition. Mr. Tomlinson says that the reason he sent the other lot in such small coops was because breeders in Canada who have ordered from him before had ordered them to be shipped in small coops, to save charges. For my part, I would sooner pay a trifle more charges and have my birds sent out in good large coops, which insures them a safe trip and good health."

### Which is the Best Breed?

Some of the breeds already mentioned, with the purchase of a few sitting hens annually, which can be returned or killed when done with, may be also the best for those with good range. Thus it will be hard to beat the Hamburgs as egg-producers, compared with the amount of food consumed, as I am decidedly of opinion, from all I have been able to gather, that with a pretty fair-sized flock an annual average of nearly two hundred eggs may be obtained from each fowl. The Loughs will be most useful fowl in such a range, and so will the Houdan; but either of these three, on grass, will beat hollow in profit either the Polish or the Spanish fowl. Where both a fair supply of eggs and chickens for the market are desired, but the demand for the latter is but moderate, few breeds can surpass the Houdans; retaining the pullets for laying, and selling off the adult fowls and the nest eggs. This is the best to make their weight at an early age, and the finest of first-class quality, and will bring credit in the market.

If, however, the demand for broody hens is objected to, or if a steady, regular supply of chickens for table is desired, other

breeds become preferable. Where a public market is the chief object, I need hardly say that as a chicken-producer no fowl will equal the Horking, if good range and dry soil allow of its being kept. In the London market, especially, no fowl will command such prices as this old and favorite breed; and on a dry, particularly if a chalky soil, there is really no difficulty in raising the chickens. The special advantage of this breed I need hardly say is massive weight at a very early age, with a great natural aptitude to put meat on the breast and get fat, or rather plump, than any other breed possesses. These are very valuable qualities, which makes the English Dorking for certain purposes the fowl of all others; but in other circumstances it does not do so well, and as an egg-producer almost invariably fails.

For a good, useful, family fowl, where chickens are needed as well as eggs for the family table, no breed will beat the Brahma. Take it all round it is a grand breed. The chicks are neither sick nor sorry; there are a plenty of them, and plenty of eggs too; and they are ready to kill at three or four months old, really fine table birds. I grow fonder of them every year. In economic merits both breeds were originally equal, but through the closer selection of the Dark variety for points of plumage alone, the Light is now in my judgment the better as a rule either for eggs or for the table, having been less deteriorated &c.

### Green Food for Fowls

Mr. L. Wright, in his new serial work on Poultry, has these observations on green food which are of great importance to all who attempt to breed fowls in confined quarters:

The last requisite in the shape of diet is a regular supply of green food. Here, again, fowls kept on grass will need no attention; but for birds penned up, the daily provision of it is an absolute necessity, though most beginners are ignorant of it. We well remember, in our own early experiences, how our fowls died, we could not, at first, tell why; and one fine Buff Cochins cock, whose only fault was a strong vulture hook, was in particular, greatly regretted. An experienced friend let us into the secret, and after that we had no difficulty in keeping fowls, even where it is often said they cannot be kept in health, viz.: in a yard paved with large flag stones. The best substitute for natural grass is a large fresh turf thrown in daily to each four or five hens; and even in towns it is often possible to procure this, by giving children a few pence every week to keep up a regular supply. Where turf is not allowed to be taken, grass may be cut or pulled, but in this case must be cut into green chaff with shears or a mangle. The latter plan is how we actually managed for years in a yard only sixty-seven by thirty-two feet, divided into six pens; paying some child a few pence to bring fresh-cut grass daily, cutting it up and mixing it with their soft meat.

**Poultry Keeping.**

The interest in poultry is wide-spread and on the increase. The magnificent show recently made at the Music Hall in Boston, was a sufficient proof of this. The fact is, that though comparatively small in amount, it is one of the most pleasing and profitable departments of the farm. We are glad, therefore, to see that it has its full share of space in the report of the Secretary of the U. S. State Board of Agricultural just issued from the press. From that we take the following:

STATEMENT OF STURTEVANT BROS., SOUTH FRAMINGHAM.

They say: "Our flock consisted of about thirty head in March, when the account commences, and varied by purchase and the hatching of chickens from this number to about two hundred and twenty.

About April 12, a flock of nine dark Brahmas was purchased and set apart.

About April 12, a flock of seven Partridge Cochins was purchased and set apart.

About March 24th, a flock of six, afterwards increased to nine light Brahmas, was purchased and set apart.

At date, the dark Brahmas had laid 172 eggs, or 21½ per hen.

At date, the Partridge Cochins had laid 156 eggs, or 26½ per hen.

At date, the light Brahmas had laid 673 eggs, or about 97 per hen.

No separate account was kept of the amount consumed by those set apart, but an account of the quantity fed out to the whole flock is here given.

March, 4 bushels corn; April, 2 bushels of corn, 2 bushels of corn meal; May, 6 bushels of corn, 4 bushels of corn meal; 2 bushels of oats; June, 3 bushels of corn, 4 bushels of corn meal, 1 bushel of oats; July, 8 bushels of corn, 8 bushels of corn meal, 4 bushels of oats; August 8 bushels of corn, 6 bushels of corn meal 5 bushels of oats.

By this account it appears that 30 adult hens, increased to 55 in April can be kept, together with their progeny, 165 in number, September 1st, from March 1 to September 1, for 55 bushels of corn and 12 bushels of oats.

Substituting values for the above form and calling each hen worth \$1, as is customary, and chickens at half price, we have the following:

Dr.—Fifty-five hens at \$1.....	\$55 00
Cost of feed.....	51 00
<b>Total</b>	<b>\$106 00</b>
Cr.—Fifty hens, at \$1.....	\$50 00
165 chickens, at 50 cts.....	82 50
<b>Total</b>	<b>\$132 50</b>

and the eggs and manure extra. But as this poultry is superior of its kind, it would bring on sale a larger price than is here given, while materially adds to the profit"—*Ploughman.*

**Experimenting with Layers.**

In the Poultry World, Isaac Lynde, of Ohio, gives the result of an experiment with different breeds of pullets in laying for six months, and the cost of their feed. On Sept. 1, he took 10 pullets of each of the breeds mentioned below, about six months old, gave them a yard 40 feet square, with a comfortable house, and kept an exact account of eggs and feed, as follows:—

The Dark Brahmas ate 369½ quarts of corn, oats and wheat screenings, laid 605 eggs, and weighed 70 pounds.

The Buff Cochins ate 406 quarts, laid 591 eggs, and weighed 73 pounds.

The Grey Dorkings ate 309½ quarts, laid 524 eggs, and weighed 59½ pounds.

The Houdans ate 214½ quarts, laid 783 eggs, and weighed 45½ pounds.

The Leghorns ate 231½ quarts, laid 807 eggs, and weighed 36½ pounds.

To make this experiment more complete, and to show which lot gave the most profit, including both eggs and flesh, we have supposed the fowls to be dressed and sold at the end of the six months at 20 cts. per pound; also, that the eggs were worth 24 cents a dozen (two cents each), and that the cost of the feed was 2½ cts. per quart, or 80 cts. per bushel. The figures would then be:

	Cost of feed.	Value eggs.	Value meat.	Total value.	Total profit.
Brahmas	\$ 9.22	\$12.10	\$14.00	\$26.10	\$16.88
Cochins.....	10.15	11.82	14.66	26.42	16.27
Dorkings.....	7.72	10.48	11.90	22.38	14.66
Houdans.....	5.85	15.66	9.10	24.76	19.41
Leghorns.....	5.77	16.14	7.30	23.44	17.67

The greatest profit on the investment is in favor of the Houdans, with the Leghorns next and the Dorkings least. It would have been interesting, however, to know the weight of the eggs laid by the several varieties, to see what actual difference there was in the amount of food furnished by them, and its value at a fair estimate of weight. On such a basis it is quite probable that the Brahmas would have shown the greatest profit. And another item to be considered by investors is, that, where the fowls must be confined, a four-footed fence will answer for the large breeds while for the light bodied breeds eight or ten feet will be necessary and even then their wings will have to be clipped. In addition, it is the general verdict that the large breeds bear confinement the best, and are more easily kept in good health and from those vicious habits of plucking each other's feathers and eating their own eggs. But all breeds will give trouble enough in confinement, if not furnished with plenty of employment, water and food.

**GAME.**—Bright red face; strong stout beak, slightly curved; round hard body tapering to the tail; short, round, hard, thigh; stout leg; flat foot; spur low, near the foot; scanty plumage, but very hard; tail scanty, carried rather drooping than otherwise; head moderate in size, but fine, sharp, and snake-like.

**Apiary.**

**Feeding Bees.**

Bee keepers who have weak stocks and intend to feed them should commence at once as it is far more convenient to do so while the weather is warm and better for the bees.

In localities where buckwheat is grown bees will gather in store this month, and weak stocks may even yet become strong; but, where buckwheat is not grown, very little honey will be gathered; with many stocks not as much as they consume, hence stocks that are short of honey will require feeding, and they will take feed much more readily now than when the weather becomes cold, not only so but they can cap over all that is stored in the combs while it is warm weather, that is, if the syrup or feed given them, is of the proper consistency.

And it is much better for the bees if capped over, for it not capped it is likely to sour in the combs, when it becomes unhealthy for the bees, and likely to cause what is generally called dysintery.

There is no doubt but bees will winter equally well on good sugar syrup as on honey; but it must be good syrup. It should always be made of good white sugar, especially for fall feeding. In the spring it does not matter what kind of sugar is used.

The sugar and water should be put together and heated until nearly or quite boiling. Ten pounds of sugar to eight quarts of water will make a syrup of about the right consistency if fed while the weather is warm, but if cool it may be made somewhat thicker by reducing the quantity of water. It is always best to feed early in the morning or late in the evening, I prefer feeding early in the morning, and give to each stock no more than they will take up during the day.

The feed should always be placed in the hive and at the top, if possible in frame hives the cap may be removed and the dish of feed placed on the honey board, then covered over with a light box or dish in such a manner that the bees may get at the food, but not be able to run over or around the hive under the cap.

J. H. HINCEY.

London, Ont., Sept. 3rd.

**Bees Swarming in August.**

(To the Editor.)

SIR,—This year has been a very peculiar one with regard to Bees Swarming. Very few of my bees swarmed in May or June, as the season was very poor, but in August those hives that had swarmed in May, and some that had not commenced as if it had been the proper season for swarming, and until August 28th they kept me busy living them. And I now find that they have gathered a large amount of honey more than I ever knew bees to gather in August. I should like to know the cause of their late swarming, and if they have done the same in other parts.

A. MOWBRAY.

Township of Moore

# Horticulture.

EDITOR—D. W. BEADLE,

CORRESPONDING MEMBER OF THE ROYAL HORTICULTURAL SOCIETY, ENGLAND.

## A Dozen Choice Roses.

We believe that a large portion of our rural population are pretty well convinced that to rear intelligent and refined families, that shall be an honor to themselves, and a blessing to mankind, they must not only cultivate those grains, and vegetables, and fruits that sustain the body, but also must surround their homes with those trees, shrubs, vines and flowers that minister to man's æsthetic nature.

We think that one of the greatest favors those who seek to impart instruction upon rural subjects, can confer upon this class, is to present short and reliable lists of the most hardy, vigorous, easily grown, and beautiful varieties, of the various species of trees and plants, in the ornamental department of horticulture. We know how it is with the inexperienced, when they make up their minds to ornament their grounds, and consult works on Landscape Gardening, or the catalogues of nurserymen and florists. They find so many kinds commended that they are at a loss to know what ones to select, and perhaps fail to order any, when perhaps if they knew of a half dozen or dozen of the very best of the different classes, they would procure and cultivate them.

This is no less true in the department of roses than in other departments. There are several hundred varieties described in works on roses, and in nurserymen's catalogues, and the novice is utterly at a loss what ones to select.

To meet this want we some time since addressed notes to the leading nurserymen and florists of this city, asking them to name a dozen of the best hardy roses, easily grown, free-blooming and representing as far as possible the different colors, shades, tints and merits. We believed that a dozen roses might be named, that would represent nearly every variety of merit in the rose, and that if such a list could be presented to our readers, but few of them would decline to avail themselves of the opportunity offered to procure a select list of roses

We extract the above from the *American Rural Home*, and with thanks to the enterprising conductor for this labor of love proceed to give in a more condensed form the results.

He received seven lists from as many nurserymen of long experience, naming in all forty-one varieties, and the vote stands,

Gen. Washington (the suffrages of all).....	7
Caroline de Sansal.....	6
La Reine.....	5

John Hopper.....	4
Victor Verdier.....	4
Gen. Jacqueminot.....	4
Baronne Prevost.....	4
Anne de Diesbach.....	3
Madame Alfred de Rougemont.....	3
Triomphe de l'Exposition.....	3
Sydonie.....	3
Madame Victor Verdier.....	3
Madame Plantier.....	3
Perpetual White.....	3

## A. Triomphe de Grand Strawberry.

We clip from the *American Rural Home* the following comparison of the Wilson and Triumph strawberries as market berries. It will be noticed that the Triumph sells at much better prices in that market than the Wilson. We are not aware that the Triumph will command much more in our market than the Wilson.

We have a neighbor, Mr. Pillow, who from long experience and close observation knows how to raise strawberries. His soil, which is a pretty heavy loam, approaching to clay, he makes rich with stable manure, and gives his plants good culture. He cultivates nearly equal areas of the two varieties, and generally has as good crops as are raised in this section, and sells them for the highest prices. We asked him for results, and received the following statements of his crops, last year and this.

In 1871, he raised on about 300 square rods, 6,288 quarts of Triumphes, which he sold for \$1,058.78. On about two acres of Wilsons, he raised 10,500 quarts, which he sold for \$1,039.76.

We find by employing some arithmetical calculations upon the above, that the Triumphes yielded 3,353 quarts, or nearly 105 bushels to the acre; and that the receipts were \$565.33 per acre; and that they averaged sixteen cents eight mills per quart, or \$5.37 per bushel. We also find that the Wilsons yielded 5,250 quarts, or 164 bushels to the acre; and that the receipts were \$520 per acre, averaging nine cents nine mills per quart, or \$3.19 per bushel.

By comparing the results of the two varieties, we see that an acre of Triumphes brought in \$45.33 more than an acre of Wilsons. Now the cost of planting and cultivating an acre of Triumphes could not have been any greater than that of an acre of Wilsons, while the cost of picking and marketing 5,250 quarts of Wilsons must have been considerable more than that of 3,353 quarts of Triumphes. Now, allowing the cost of picking to have been two cents per quart, and the cost of picking the excess of Wilsons would have been \$37.94, which, being added to the excess in receipts, and we have a result of \$8.37 in favor of an acre of Triumphes.

This year the Triumphes yielded 2,202 quarts, or about 70 bushels to the acre, and

the receipts were \$334.70 per acre, averaging 15 1-5 cents per quart.

The Wilsons this year yielded about 2,666 quarts, or a little more than 83 bushels to the acre; and the receipts for them were \$278.38 per acre, averaging 10 1/2 cents per quart.

By comparing results this year, we find that the receipts from an acre of Triumphes was \$56.32 more than from an acre of Wilsons.

Mr. Pillow cultivates his strawberries in rows, three feet apart, plants ten to twelve inches apart in the row, and keeps the runners cut off. Had some of them in beds of 3 rows, eighteen inches apart, 3 feet between the beds, but could see no great difference in the results.

## Hale's Early Peach.

Commenced to ripen at St. Catharines about the 20th of August. The trees were well loaded with fruit, but it rotted very badly as it began to ripen, so that only a small portion of the fruit came to maturity in a perfect condition.

## Fruit Acid

This receipt came originally from Switzerland. By it you may make drinks of small fruits, especially raspberries, blackberries, stemmed currents, and seeded Morello cherries.

Dissolve ten ounces of tartaric acid in two quarts of cold water. In a large bowl put twelve quarts of berries, well looked over. Pour over them the acidulated water, and let the fruit stand thus undisturbed for forty-eight hours. Then have ready a flannel bag, through which let the juice drip without squeezing. When the bag is well drained, measure the juice. To one pint of acid allow one pint of white sugar (coffee sugar, however, No. A, will answer as well.) Allow the sugar and juice to remain together in a large jar until the former is thoroughly dissolved; then bottle. As a slight fermentation may ensue, do not cork at first, but tie the mouths of the bottles up tightly with Swiss muslin or gauze, to stand for several weeks, until the danger is past. In six weeks you may safely bottle—you will find that it never spoils.

Such acid furnishes a refreshing beverage during the hot months of summer, and would be found grateful to fever patients in any season. It has the advantage of being ready at a moments warning, only needing to have your glass or pitcher one-fifth part full of the acid, filling up the remainder with cracked ice and pure water. Glass pitchers or carafes of these innocently cooling beverages set off a dinner table pleasantly in warm weather, especially as by adding lemonade you may have colors varying from pale straw to the rich garnet of blackberry acid—the last named being, perhaps, the best in flavor of all.—*Rural Home*.



### Dr. Hull's New Curculio Catcher.

At the meeting of the Alton Horticultural Society which celebrated the national holiday by a meeting on Dr. Hull's premises, we had an opportunity of witnessing the operation of this new machine, a patent for which has been already applied for. The general shape of the frame is much the same as that of the wheelbarrow machine, illustrations of which have already been published in the CANADA FARMER, and in the transaction of the Illinois State Horticultural Society. But the new machine instead of being mounted on a wheelbarrow, is suspended from the shoulders of a man standing in its centre. A slit a foot wide in the canvass before him enables him to carry the machine under and about a tree, when the slit is covered by a strip of cotton easily and quickly, and the tree struck with a covered mallet or maul. The machine weighing only 8 to 10 pounds and the operation rapidly performed. Dr. Hull tells us he has been able to go over 960 of his younger trees, now three years planted, in 3½ hours; which is at the rate of nearly 275 trees per hour. In this case the ground is clean and the trunks clear to a considerable height which facilitates rapidity of work; but (and this seems to us a special advantage of this machine), almost any tree, however low-headed, can be got under and its insects caught.

We regard this after the brief examination made as far in advance of any of the methods yet devised for catching the curculio. Combined with the Ransom process it ought to give at moderate expense almost entire exemption from the ravages of the insect. The works can, we think, be done more rapidly, easily and thoroughly, than ever before; and will do more to get more persons engaged in "bug catching," than any invention could make.—*Prairie Farmer.*

### Destructive Insects.

At the late meeting of the Michigan Entomological Society, Prof. A. J. Cook, of the Michigan Agricultural College, in a lecture on destructive insects, treated of the canker worm and its ravages, and gave reasons why the subject of entomology should be studied by all. As the apple is the leading fruit in the State, he took up first, its worst enemy, the codling moth, which deposits an egg in each apple; the egg soon hatches into a larva, or apple-worm. After it is fully grown, it crawls into a concealed place and undergoes another transformation, spinning its cocoon. And about the time the apple is perfecting, it comes out and lays its eggs. As they conceal themselves in secret places, bands of hay or straw may be put about the tree and when the insect secretes itself in these, they may be taken off and burned.

The fall webworms, or white moths, that make their webs in the trees, may be destroy-

ed by wiping off the webs and destroying them. The borers do much damage to the tree in destroying its vigor and looks. There are the roundhead and the flathead borers. They may be destroyed by running a wire up into the bore made by the insect.

The apple tree bark lice are very injurious. An easy and effective remedy is to wash the tree carefully every year with strong soap-suds, just at the time they hatch, and they will not lay eggs on trees well washed and kept clean.

The canker worms may be prevented from doing injury if they are kept away from the tree, this may be done by tarring the trees.

The next in importance is the peach tree borer. Think they might be destroyed by hot water. The usual method is to dig away the soil about the base of the body of the tree and put in fresh earth after destroying all the borers to be found. Soft-bodied insect may be destroyed by whale oil soap.

Insects injurious to grapes and plums were likewise spoken of, the remedy is to place something under the tree to catch them, and then shake the tree. Methods for destroying the cutworm, or at least preventing its ravages, were delineated, but for the last two years they have not been heard of in this section, and it is hoped their absence is permanent.

The Professor stated some of the advantages of having a State entomologist, and thought it the duty of this association to see that a State entomologist eventually becomes one of the State officials as much so as the State geologist.—*N. Y. Sun.*

### Raspberries—Removing old Canes.

It has been the practice of our best small fruit culturists to cut out and remove the old canes from bearing plantations of raspberries and blackberries, as soon as they are through bearing, not dreaming that they were thereby impairing the vigor of the plant. But last year Mr. Sereno Edwards Todd broached the theory, in the *Journal of Horticulture* if we mistake not, that by so doing we are weakening our plants. His theory, if our memory is correct, was something like this—while the canes are maturing their fruit, and for some weeks thereafter, they contain considerable sap, which gradually flows downward into the roots. If the canes are removed before the sap has passed out of them, the roots are robbed of a portion of their nutriment, and consequently weakened.

We admit that the argument is not without plausibility, but doubt whether the nutriment saved to the plant would amount to much. It would require very careful experiments, conducted for a series of years, to decide. On the other hand, it so much facilitates clean culture to remove the canes when done bearing, that we think fruit culturists will be slow to change their practice.—*Rural Home.*

### Raising Fruit in the Shade.

In 1863, I planted two rows of raspberries about sixty feet long, and three feet apart, in the rows directly west from a two-story building, and under the north side of a tight board fence, so that they got no sun till afternoon, and not more than two or three hours of any day; and from that plantation we have picked two bushels in the season of Red Antwerps and Brinckle's Orange, that were the admiration of our neighbors.

The finest Black-caps I ever raised were directly under the north side of a high barn.

I have raised a full crop of strawberries—Russell's, in the same location, and thus lengthened out the strawberry season, as they ripened a week later than those that had the full benefit of the sun.—*Fruit Recorder.*

### Newer Strawberries.

Emperor, healthy, fine plant. Fruit, "meaty" and luscious; large dark crimson. Yields equal to Jucunda, and sells for nearly as much. Green Prolific—this variety with us, and we believe with most planters, proves more profitable than Wilson's. Fruit large and fine when well fertilized. It's a good plan to have every third row of the Jucunda, which when mixed with them, gives them a better color and sells them for good round prices. The plants are so strong and healthy, it certainly yields equal to the Wilson's with us, and sells for better prices. Charles Downing—the old Hovey Seedling over, only a better bearer—delicious and so large and uniform in size Boydan's 30, so fine and "meaty." The only fault is in not ripening evenly. Similar in this respect to the Russell, Kentucky—ah! here's the sort for lateness—a magnificent fruit too. So even in size, of such a beautiful scarlet. It paid us well this year, for when we were picking largely from them, most other sorts were gone, and prices had gone up, so that we sold all readily from twelve to fifteen cents right at home. \* \* A few words as to some other sorts:—the Colonel Cheeny is a magnificent sort; very productive and so large and of such a beautiful bright color, and of such luscious quality too. The plant resembles the Wilson's Albany very much, being equally as robust and hardy, and as prolific thus far with us.—*Fruit Recorder.*

### Winter Killing of Apple Trees.

J. Allen, of Belmont Tp., Warren Co., writes the *Iowa Homestead*, that the best way to prevent apple trees from winter-killing is to select some variety that is known to be hardy—plant the trees, and after one year's growth bud them with such varieties as are desired—as it is the body and not the limbs that winter kill. That if you get a hardy trunk, you may safely bud in the top with tender varieties.

### New Geraniums at the Chilwell Nurseries.

It would be impossible fully to describe all the newest sorts of Mr. Pearson's Geraniums, but I will try to give a rough sketch of some of the leading varieties. I will take them in their separate colours, and first begin with PINKS. For several years he has devoted special attention to this class of colours, and his labours have been crowned with great success. *Arworth*, perhaps, possesses the deepest shade of blue of any Geranium yet in cultivation. It is a good bedding variety, of the style and habit of *Christine*, with plain leaves; the truss compact, with a deep blue-tinted rose colour, and is likely to take the lead in this class of Geraniums. *Rose Bradwardine* is a valuable variety by its profusion of lovely rosy pink-coloured flowers; the habit of the plant is compact and free-flowering, with immense large trusses, and a very good flower. *Rose Peach* is a deep glowing pink, dwarf habit, highly attractive flower, a most interesting variety. *Lady Louisa Egerton* is a bold pink flower with a bright centre, immense truss, the individual flowers very large; habit good. *Mrs. Lovell*, a beautiful dwarf habit, half-Nosegay, with a wonderful good truss: it will prove a valuable bedding variety from its compact habit of growth, and its profusion of rich flowers. A bed of it in the trial grounds proved its adaptability for flower-garden purposes. *Flornce Durand* is a rosy pink with a deep shade of purple. I have it in bloom in the conservatory, and it stands pre-eminent as an in-door plant: its great substance of petal and its freedom of bloom make it equally as good for out-door embellishment. *Mrs. P. Barnaby* produces fine large, round trusses the flowers perfect in form and shape, a pretty shade of pink, with a good compact habit; a most effective pot plant. *Ang Row*, dark pink, merging into rose; fine habit and truss. *Hon. Mrs. Blue* is a gem, with plain leaves, half-Nosegay, flowers pink shaded with violet, dwarf and compact: a first-class bedding variety.

The foregoing include most of the pinks already sent out, and coming to the SCARLET and CRIMSON SCARLET, we have some wonderful productions. The most conspicuous and best in all respects among the scarlets, the most useful either as a conservatory plant or for the embellishment of the flower garden, is *Corsair*. It is a rich scarlet of perfect form, is so prolific in bloom, so fine in habit, substance, and truss, and so wonderfully good in all respects, that Lord Derby and all others of that class are completely put in the background. *Mrs. Hetley* is a fine bold scarlet, with a very large truss, and answers well out of doors. It is marked in my note-book as one of the best. *Chandler Sea* belongs to the same class of colour though more dwarf in habit. I think it would prove useful for out-door decoration. *Lord Belper*, dark scarlet shaded with crimson, very large

truss; one of the best for bedding. Miss Stubbs, Mrs. Sibray, and Miss Saunders, are all dark crimson flowers, with bold trusses, and good habit. *Thomas Adams* is a fine shaped flower, red shaded with salmon; also *Charles Barrows*, much in the same way, only a deeper red. *Col. Hallen* is a rich rosy crimson, of faultless shape, good in substance, truss, and habit. *Rev. T. F. Dean*, *Mary Flower*, *Snowdon*, and *Samuel Bennett*, have rich deep crimson flowers, and the trusses are very large and well-shaped. *Mrs. Hoie* is also a useful introduction with deep magenta flowers, of the habit of Violet Hill Nosegay. Then come three other varieties of the Violet Hill type, *Mrs. Vincens Finn*, *Red Dwarf*, and *Shakespeare*. These are likely to prove the most useful of all for bedding purposes: they have the habit and freedom of bloom of Violet Hill, with a deeper dash of scarlet in their flowers. Violet Hill Nosegay, though one of the very best of all bedding Geraniums, looks pale and washy and meagre by the side of the three last-named sorts.

Among the GOLDEN TRICOLORS I shall mention *Mrs. Docksey* as one of the brightest and most attractive I ever saw. *Lady Manner* was also good, the colours so bright and pure. *Mrs. Pollock* growing near to it looked poor and mean. *William Sandy* is one of Mr. Pearson's best Tricolors. A clergyman who had visited the Chilwell Nurseries, wrote to me from the north of England a short time since that he considered it the most perfect Tricolor he ever saw. I had it growing in a pit during the spring months, mixed up with other similar sorts, and it was always picked out as the best Tricolor we had even by the uninitiated. There were others in this class all good and superior sorts, such as *Abram Bass*, *Miss Locker*, and *Monsieur Durand*, but the above I considered the best.

Coming to the Silver VARIEGATED section, I may mention as an old favourite one called *Pearl*; it has a broad pure white leaf margin, with a dark zone, the flowers a pretty shade of pink, which contrast most beautifully with the foliage. While on the Silver-edged section I may mention three gems that Mr. Pearson showed me that will not be sent out for some time—*Mrs. Bishop*, *Mrs. William Hollins*, and *Miss Minna Hollins*. They are the most perfect and free from fault of anything I ever saw, and there is such a sweetness and softness in the flowers, and such chasteness in the foliage, that the flowers and foliage contribute to each other's beauty. *Mrs. Bishop* had lilac pink flowers, and those of *Miss Minna Hollins* soft delicate pink.

I must now return to a few Zonals that will be sent out next season. Some of them were planted out in the trial-grounds in a mass, so that there was every chance of testing them both for out-door and in-door purposes. *Rosina May* was excellent in the open garden; it had a fine bold truss. *Contessa Quarto* was bright and beautiful, with dark pink

trusses of bloom. *Mrs. Hoie* and *Mrs. Miles* were also very good, with fine pink flower-trusses. *Matilda* appeared one of the best as a conservatory plant. I noticed on a small plant in a small pot seven or eight trusses of immense size. *Mrs. A. Moss* was darker than some in this section; but *Mrs. Masters* was the finest and the best of this class of Geraniums. I was curious enough to measure one truss, which was nearly seven inches across. *Mrs. Young* and *Mrs. Skipper*, however, were also without a fault; the trusses fine but not so large as *Mrs. Masters*.

The above list of Geraniums consist of varieties of sterling merit, and far superior to many popular well known kinds. Many of those sent out we have growing in our own houses. And without exaggeration can testify to their superior qualities.—Q. READ  
*In Cottage Gardener.*

### Time to Plant Fruit Trees.

There are various circumstances to be taken into consideration in determining which is the better time for planting fruit trees, Spring or Fall. If the soil is light and moderately dry, and the locality not too far North, trees may be safely planted in the fall, provided they are of the most hardy kind, such as apples, pears and plums; but taking all things into consideration, we prefer early Spring to Autumn. But the trees should always be dug up in Autumn, and transported to the place where they are to be planted, and then carefully heeled in. In heeling-in, the roots should be covered quite deep, so that at least a foot or more of the stems will be covered.

If there is any danger of the stems or branches being injured by cold, shade them with branches of evergreens; or old coffee sacks may be used for the same purpose. Hay or straw might be used if it did not offer an attractive retreat for mice; but almost anything that will partially shade the branches during the Winter and not prevent rain and snow reaching them, will answer.

The principal objection to burying the trees entire in the soil is that the buds are often injured during thaws in Winter, or perhaps before they are taken out in Spring. If one could be certain that the soil would remain frozen from the time the trees were buried until within a few days before they were taken out in Spring, then we would prefer this system of preservation to any other; but we are not, hence it is not always safe in every locality.

The reason why we prefer to have all deciduous trees that are to be transplanted in Spring, dug up in Autumn, is to allow plenty of time for wounds on the roots to heal preparatory to producing new rootlets. This healing process will proceed quite rapidly, even in cold weather, if the roots are buried sufficiently deep.—*Rev. New Yorker.*

## Chinese Yams.

NORWICHVILLE,

ONTARIO, 22nd Aug., 1872

To the Editor.

Sir,—Being desirous of experimenting in the cultivation of *Chinese Yams*, I should be much obliged by your informing me where I can procure the seed, or any other information upon the subject which you may consider useful.

You may answer in the columns of "Weekly Globe."

Yours respectfully,

F. A. DEEKENS

Some years ago Wm. R. Prince, of Flushing, Long Island, N. Y., took a great deal of pains to advertise, and, if possible, sell the *Dioscorea babatas* or Chinese Yam. In 1857 considerable attention was paid to this new tuber. Doctor C. T. Jackson, of Boston, made a careful analysis of it, and reported that it contained

Water .....	80.52 per cent.
Starch .....	9.93 "
Cellulose .....	3.65 "

and that the Mercer Potato, examined at the same time, contained

Water .....	75.80 per cent.
Starch .....	12.54 "
Cellulose .....	3.62 "

thus showing that this variety of potato yielded more starch and less water than the Chinese Yam.

In February, 1858, it was reported in the Bulletin of the Society of Acclimatization of France as yielding four per cent. less of starch than the potato, but it was also stated to stand cold far better.

The late Judge Harrison, of Toronto, cultivated it in his garden and esteemed it highly. As late as March, 1869, Mr. Chas. Downing, of Newburgh, N. Y., wrote of this Yam, "It is still free from disease, perfectly hardy, remaining in the ground during winter, very productive, and to my taste, equal, if not superior, to every potato I have seen. I find the quality of those of three years growth, much better than those of one and two years, and at this age they often weigh eight, ten, and twelve pounds each."

Of late very little attention has been paid to the cultivation of this Yam, and we have not seen any puff or advertisements. There is, no doubt, but that it is less cultivated than its real merits deserve. We can only suggest to our correspondent to address a letter to Parsons & Co., Flushing, N. Y., who might be able either to supply him themselves or put him in the way of procuring the tubers.

**A LATE STRAWBERRY.**—The Kentucky is rapidly gaining favour as a Strawberry. It is a very strong, vigorous plant—fairly productive, of good size, bright colour, holding out eight or ten days after other kinds are gone.—*Rural Home.*

## Cats as Fruit and Seed Protectors.

A correspondent of *Land and Water* writes—"It often appears to me that people for the most part are not aware of the great use cats are to us. Of course, we know of their use with respect to mice and rats, but do we generally know of the invaluable help they can give us in protecting from birds our garden fruits and flowers?"

To keep off the birds how simple, how certain, how small is the cost of a cat on a small chain sliding on a wire, and giving the animal the walk up and down the whole length of the strawberry beds. A knot at each end of the wire readily prevents the cat from twisting round the post which supports the wire, and a small kennel placed in the middle of the walk affords her shelter and a home for her kittens. In large gardens a second cat is required, and the young ones in their frequent visits to each other greatly assist in scaring away the birds. I have for more than thirty years used, and seen used with perfect success, this easy method of protecting fruit, and the very same plan is equally good in keeping hares and rabbits off flower beds. After the first few days cats in no way dislike this partial restraint, and when set quite free, after a few weeks' watching, they will of their own accord continue on guard. The kittens more especially attach themselves to this garden occupation, and of their own accord become the gardener's best allies."

## New Canadian Cherries.

Our long time friend, Mr. James Dougall, of Windsor, Ontario, has been raising some new seedling cherries. We have not enjoyed the privilege of seeing them, but clip the following account of one of them, written by F. R. Elliott, of Cleveland, Ohio. Doubtless samples have been sent by Mr. Dougall to the President of the Ontario Fruit Growers' Association for examination by the Committee on seedling fruit, and that in due time we shall be favoured with their report.

"No. 1 is a large, liver-coloured fruit, almost an exact fac simile of Elkhorn. It is evidently a profuse bearer, as the spurs have from eight to fourteen fruit attached. It occasionally is in triplets, but, as a rule, in doublets. As we have said, in appearance this cherry resembles the Elkhorn, but in its flesh—which is extremely firm and of a deep flesh colour—it is entirely distinct, and more nearly resembles the Gridley than any variety with which we are acquainted. Apparently this must and will be a popular market cherry."

**EFFECT OF THE PERFUME OF FLOWERS.**—The presence of the perfume of a flower in the air increases the power of absorption of heat sixty times, and aniseed 372 times; hence the perfume arising from a bed of flowers increases the temperature of the air around them.

## Correspondence.

## Farmer's Wives and Daughters.

(To the Editor.)

SIR,—Having read with interest the letters in the *Canada Farmer* on Farmer's wives and daughters, I thought if you would allow me a short space in your columns I would like to say a little on the subject. I was particularly pleased with Maud Melville's letter. I quite agree with her when she says that farmers are the most independent class of persons in the world; and I would add that farming is the most ennobling and dignified occupation, and the most beneficial both to body and mind. But it is about their wives and daughters that I wish particularly to speak at present.

I am a farmer's daughter I am happy to state, and would not if I could exchange my position with that of my city cousins, who hold their heads so proudly, and look so innocently in another direction when we chance to meet at the same time, perhaps, their poor fathers are harassed with debts and bankrupt courts, and struggling to keep up an appearance, and just because I am guilty of being the daughter of a farmer and living in the country. A great many seem to think that farmers' wives and daughters have no time or inclination for anything but working from morning till night, but I would inform all such that they are greatly mistaken, that is, judging from this part of the country. It is true the time has been when it was too much the case, and there are still many who are obliged to do much more than they should do. But that time is fast passing away. It is an age of invention and progress, and so many labour-saving machines have been brought into use, that farm life is not the drudgery it once was. Refinement and intelligence are making rapid advancement throughout the land, and is no where more clearly seen than in the farmer's home. Yet I do not mean to say that to be refined and intelligent we must be ignorant of household affairs; on the contrary, I consider a thorough knowledge of domestic duties to be a most important branch of female education.

As the principal part of our work is done in the morning we generally have the most of the afternoon to devote to fancy work, music, reading, making or receiving visits, playing croquet, or anything else we choose. And then there are our pic-nics and entertainments of various kinds occasionally, so that there is no reason why we should not enjoy ourselves just as well in the country as any other place.

Of course we enjoy ourselves none the less in the parlour (even if our hands are not quite so delicate) for having first performed the duties of the kitchen.

I think with Maud Melville that the education of farmers' daughters in the higher

branches has been too much neglected, but our common school system is so much improved that this deficiency is now in a great measure supplied. A good English education may now be obtained at almost any country school. Nevertheless there are many advantages in towns and cities which we do not enjoy, but those that we have are better improved.

As regards dress, it is my opinion that farmers' daughters have as elegant and refined taste as their city friends, and take as much pleasure in being well dressed; yet they do not make it the most absorbing subject of their thoughts and attention, nor do they feel under any obligation to follow the dictates of fashion any farther than their modesty and good sense will allow.

Of course there are exceptions to this as well as every thing else, but I do not think it right to judge the whole by a few.

If you were to trip through the country I think you would see as many tasty and happy homes among the farmers as anywhere else. Although there may not be so much style, yet there will be true refinement.

I think I may safely say, that the time is not very far distant when their real position will be recognised by all classes of society  
JESSIE.

### Our Canadian Homesteads.

To the Editor

Having occasion, not long since, to pass through a considerable part of one of the neighbouring States, I was careful to mark the contrast which its appearance presented, in agricultural features, to that of Canada, and I am satisfied I saw nothing in the lay of the country or appearance of the crops which would lead me to desire a change and rank myself in the list of American, rather than Canadian farmers. But whilst believing that here in Ontario, we stand on even footing with our cousins across the line, in natural advantages yet I am free to confess, that in one point they lead the van; and to that point I wish to draw the attention of our farmers: the appearance of their houses in contrast with ours is rather striking. They are not generally the substantial structures which we have in this part of Ontario, but their design and especially finish—which when frame is frequently nothing more than a coat of white paint and green shutters—gives them a most pleasing and inviting appearance.

What is the cause of this difference between our houses and theirs, we naturally ask. Are their resources greater? We answer no; but they have acquired a little taste, at least, this seems to the writer the most reasonable way of accounting for it, and what further leads to the ignoring of Capital, and that credit may be given to whom it is due I found that, almost without exception, our out-buildings, barns, &c., are superior to theirs.

The following reflection I believe is just, if they had them over there, they would paint them.

It is almost incredible what a grace a little taste in the arrangement, surroundings and finish of the farm homestead gives, not alone to the farm, but to the whole landscape.

For those that have been erected 15 or 20 years ago, a due allowance will of course be made, but who has not sighed as he passed houses of much later date, the design of which, we might reasonably infer, was taken from some of those old distilleries which here and there are yet to be seen the relics of bygone days. A few trees would do much to break the dull appearance, but, alas, they have long since been cut down, and the owner believes as little in planting more, as in using the brush to barn or house.

Why so many instances of careless indifference to the appearance of "home"? To suppose it is through fear of affecting the pocket or the muscles, would be uncharitable, as I believe, in most cases, it is false. I ascribe it therefore to the fact that taste has not enough entered into our education, and that from year to year we go on sowing and reaping, filling the bank with the golden fruit of our toil entirely forgetful of the appearance of our homes.

We ought to think of this more in the future reminded that other eyes behold our homes, and strangers form an opinion of our country and its inhabitants from these externals, and in the end we shall find that labour bestowed and money expended in this direction has realized more than its value

A FARMER'S SON

Dumfries.

### Early Joe Apple.

(To the Editor.)

SIR,—I wish to call the attention of your numerous readers to the excellent qualities of the Early Joe Apple. In my opinion we do not possess another summer dessert apple that can at all compare with it in flavor. We have been enjoying the fruit in my family for the past fortnight, and to-day, September second, as the last are gathered, only regrets are felt that they are so nearly gone. It is a great pity that it has not been more widely disseminated, and its most excellent flavor more generally known. When young the tree is a slow grower, and nurserymen have been at no pains to sound its praises as it deserves, because there was no profit in raising the tree at ordinary prices. Yet I am sure that were fruit raisers aware of its excellence, they would not hesitate to pay twice the price of ordinary apple trees to obtain it. In Beadle's Canadian Gardener it is stated that the tree seems to be nearly if not quite as hardy as the Red Astrachan, and this be so there can be no difficulty in the way of its being grown in nearly every fruit garden in Ontario.

My tree commenced to bear very young,

and has continued to yield good crops of fair, medium sized fruit. The apples have a very handsome appearance, quite red on the side exposed to the sun, and on the shaded side very prettily streaked with red on a light yellow ground. The skin is sprinkled all over with light dots which usually increase in number towards the eye. The flesh has a rich yellow tint, is very tender, breaking, fine grained, juicy, and of a most agreeable somewhat spicy vinous flavor,—quality the very best. Every one who enjoys such a fruit, ought not to be without at least one tree of the Early Joe

### Answers to Correspondents.

A SUBSCRIBER, Oshawa.

We have not space to enter into a full scientific explanation of the nature of electricity as developed in a thunderstorm.

Electricity is supposed to be of the nature of a fluid, which fluid is divided into two kinds, usually called *positive* and *negative*. These two have this peculiarity, that when positive electricity meets positive their mutual action is repellant, and the same when negative meets negative; but when the opposite kinds meet their action is attractive, and so strongly are they attracted, that very rapid and powerful combustion is the effect.

Now, when clouds surcharged with opposite electricity come within a certain distance of one another, the electric current leaves the one to combine with that of the other with great force, their combination causes combustion as seen in the flash, and the sound of which is heard in the thunder.

The same takes place when a cloud surcharged with one kind of electricity comes near the earth—the earth here taking the place of the other cloud.

Now it is a well-known fact that electricity always *gathers towards a point*, and will escape from a point sooner than from an object with a broad surface; for instance, if the knuckles of one hand and the point of a finger be approached to the glass of an electric machine, where electricity is gathered on the glass, the electricity, of an opposite kind or pole, will fly from the person's body out of the finger before it will leave through the knuckles of the closed fist.

The lightning conductor then as a point takes the place of the finger. The electricity contained in the earth will fly to meet the opposite electricity in the clouds from the point of the conductor which is connected with the earth and isolated from the building, sooner than from the points of the building itself.

If the conductor is not there, pointing upwards to the clouds, there are great chances in favour of the electricity leaving through the barn, and such an event would cause such a shock of combustion to the barn as in all probability to destroy it, and very possibly to set it on fire.

Red River Grasshoppers.

(To the Editor)

Enclosed herewith I find you specimens just received from a highly intelligent correspondent at Fort Garry (by mail) of the dreaded pest of that fine country—they are apparently male and female, the latter being full of eggs. I send at the same time a specimen of what my correspondent appears to think is an egg of the Grasshoppers, but which I rather suspect to be something else—viz. either some insect belonging to the prairie in its maggot state—or otherwise—possibly the parasite which is known to affect the Grasshopper and by which nature keeps them in check from being an entire and consuming pest.

My correspondent states that the Grasshoppers have appeared in such numbers this year and with certain signs, well known to the old inhabitants, which assure them that next season the pest will so devastate the country that it will be entirely useless to plant new crops, and that consequently none will hold sufficient produce only to last them and their wants two years, will either sell or dispose of what they have; but calculate the next season being so far as crops are concerned, a total blank. The most prolific Prairie hay I suppose however, that all farmers worthy of the name will take advantage of the blank season to do their fallowing, and extra manuring, and cultivation in such a manner that the succeeding crop will almost amount to a double crop.

You will also find enclosed a piece of the Prairie Grass which accompanied the insects and which as it shows its flower stem will enable you to give a name, and classify it.

In your notice of these insects please state their proper names and designations, and inform your Canadian reader how the Grasshoppers of Red River differ from those which in some years affect our own farming lands, in such numbers and with such mischievous effects.

VEGETS.

NOTE BY EDITOR: The specimen of Grasshopper received with the foregoing communication belongs to the terrible and justly dreaded scourge of the Western States, "the Hateful Grasshopper," *Catantops Sabulosus* Uhler. To the casual view it resembles very much one of the common species found in our fields and gardens here, but closer inspection reveals the fact that the devastator of the west is provided with much longer wings that enable it to fly from one locality to another in vast swarms. It is a sad drawback to our splendid Red River country that it should be thus affected by this destructive pest, but we trust that our correspondent's fears for next season's crop are much exaggerated. There appears to be no reason for apprehending any visitation from this pest as far east as

Ontario; it has not been known to advance further in this direction than the States of Kansas, Nebraska, Iowa, Missouri, Minnesota, and the Province of Manitoba. Its chief haunt is the region between the Missouri River and the Rocky Mountains, beyond which swarms occasionally come a couple of hundred miles to the East, but not further. The object taken for an egg of this Grasshopper is the pupa of a fly or small moth; we cannot tell which until it hatches out. It may possibly be one of the parasites of the Grasshopper.—The grass, of which we saw an abundance during a recent visit to Iowa, we are unable to describe scientifically, knowing but very little of the classification and nomenclature of botany.

Hoing when the Dew is On.

(To the Editor.)

Sir, Reading a piece in your paper about hoing while the dew was on, I had part of my cabbage-bed in the afternoon and the remainder early in the morning.

The part hoed early kept quite damp, while the other dried considerably.

I think it a good plan to hoe in the morning.

Would some other person try the experiment and give us their experience.

Yours truly,

JOHN OLAPS IN

Dorham, Sept. 1872.

The Canada Farmer.

TORONTO, CANADA OCT 15 1872

The Late Provincial Exhibition.

The success of the Provincial Show at Hamilton was very gratifying, and the public, and especially the thousands of farmers who crowded the grounds will assuredly have learned by their attendance the lesson that agriculture, as a scientific profession, is one which, to be carried to its highest point of excellence, requires much attention, much enterprise, and no little administrative power. To raise a class of animals, so superior to the usual stock of the country, as those exhibited at Hamilton, requires an amount of time, money and enterprise, little conceived by those outside the ring of our breeders.

Immense credit is due to those few men who, introducing the best of stock into the country, have done so much to raise our cattle, sheep and swine high in point of excellence above the same classes as known in Canada say twenty years ago.

We consider the Exhibition just closed, in every department, a great improvement upon those which have gone before. If there were not as many animals exhibited as the entries entitled us to expect, the quality of such as were on the ground to our mind fully compensated for any deficiency that

there might have been in quantity. The writer has been to several of the Royal Shows in England, and to assert, without fear of contradiction, the quality of the horses, short-horn sheep, and pigs were well worthy of competition at any show in Great Britain, the stronghold of thoroughbred stock. The seeds, roots, vegetables and fruit formed a most excellent display. The show of fruit was particularly worthy of notice for quantity, and especially in its great variety. A visitor to the fruit shed in Hamilton could not but notice not only the quality of our finer fruits, but the various parts of the country from which the display was drawn. There were apples from all parts, and there we saw grapes from every section, from down east, from the northern parts about Goderich, and from our fruit-growing section par excellence, the peninsula between Lakes Erie and Ontario. There was an excellent display of Machinery, and every one must have noticed the immense number and variety of labour-saving machinery exhibited on the grounds. With the present scarcity of farm help and the ever increasing demand in wages, farmers must look for machinery, by means of which to reduce the requirement for hands. Our manufacturers refuse supplying this demand, and in no other department, to agriculture do we observe such constant and rapid advance in it as in the manufacture of farm implements and machinery.

It is utterly impossible, in the short time allotted to the Exhibition, and in the promiscuous crowd attending it, to show to advantage such articles as are brought by our large agricultural implement makers. We regard it as highly desirable that there should be a special exhibition (either previous to or after the provincial) of manufactures, fine arts &c., thus giving to the public and to those particularly interested an opportunity of examining at leisure, and thoroughly, the various articles shown in this class.

Energy and activity on the Farm.

TALKS WITH BUSINESS MEN

Nothing spurs up a man so much as now and then to talk with an active, energetic, business man! especially if he has been successful,—without this addition, his precepts do not make the same impression; Farmers naturally—from their isolated position,—have a great tendency to "run down" in their energy and activity. Business men are much less so, one cause for this may be, and probably is, that too much bodily exertion produces a natural stagnation of the mind; But we all have many times felt, how 'spurred up' we have been by listening to others' success, and hearing them recount their difficulties, and how they overcame them, and when we see the energetic fire of success and determination blaze from their eyes, we at once are impressed with our own short comings, and want of activity. This is especially good for Farmers to feel, and is a

most salutary dose of "tonic" medicine. But while listening to these recitals we must not forget that a few minutes will serve to recount the trials of years, and is pleasingly exciting. — But for us to attain the same position, by the same means, these years of activity trials, and energy must be steadily gone through.

But the reward in future is sure, success is all but certain and the comfort during the process is immense. The very determination and "nerve" that the process naturally puts into a man lightens four-fold the trials attending the same; whereas were it otherwise, and if we allowed a low desponding frame of mind to usurp our energy, our labour is ever hopeless, our spirits low, and the future horizon dark and sunless.

Much therefore may be gained by any one in talks with driving, successful business men, and these talks soon show us how much more other people are attending to their business matters than we are, and moreover a continued repetition of this sort of thing is very necessary, as quite naturally increasing age, and probably decreasing ability and strength, lead us somewhat into sloth and indolence.

**The Diversion of Immigration**

The Globe of the 16th ult. drew attention to the fact that a party of English farmers proposed to settle in Minnesota, expressing regret at the same time that those desirable immigrants have not been properly informed of the advantages offered by Canada. We hope even yet that the pioneers of the party may decline to recommend their friends to take up land under a foreign flag, one of the conditions of which step must be the sacrifice of their nationality.

The St. Paul Daily Press of Sunday last states: — The party of gentlemen sent to Minnesota to find farms, and a place to locate a colony, which they design calling New Yeovil, after the Yeovil district from which many of the colonists will come, arrived in St. Paul a few days ago, and, with Hermon Trott, Esq., the Land Commissioner of the St. Paul and Pacific Railroad, took a director's car and passed over that road to spy out the ground preparatory to locating, if the inspection was satisfactory. This party is really a committee sent out in advance, representing about 1,000 persons, who desire to engage in the enterprise. The Rev. Dr. Rodgers is at present at the head of the party, and his desire is to form a colony of high religious character. They proceeded with Mr. Trott to Breckenridge, and expressed themselves highly pleased with the country, saying that they had supposed that the American people were accustomed to describe their country and its good qualities in a highly colored way, which would not bear an unprejudiced comparison with facts: but they were convinced that the

descriptions they had read of Minnesota fell short of the reality. Stopping over night at Breckenridge, they were taken in teams the next morning to Glyndon, from which place they will return over the Northern Pacific, and come to St. Paul. Mr. Trott returned direct and was in the city yesterday. He broached to the members of the party his plan, as published in the Press a few weeks ago, for selling large farms wholly on credit for three years, and they were very favourably impressed with it. They are nearly all practical farmers, and well qualified to judge of the properties of the soil, and the prospects of success, and were better pleased with the strong rich land in the vicinity of Breckenridge than any other land they had seen. They are all men of some means. They desire to obtain large tracts of land, a greater part of them for the purpose of raising wheat, but some, with the real English love of good stock, desire to engage in stock raising — a branch of farming which is gaining in favour in the State. Should they locate here, as there now seems to be little doubt that they will, it is probable that a number of the younger sons of the landed gentry of England will accompany them, probably turning their attention to stock, chiefly with the idea of gaining here estates, which the laws of entail prevent them from acquiring in the old country. Some of the party now here are in haste to return, as they have farms rented, the lease of which will soon expire, and they must be there either to relinquish or continue them. A few mechanics were in the party, and they showed their practical sense by entering immediately into American workshops in order to acquire the American ways of doing things. This colony will be heartily welcomed, should it come, for of such are many of the most thriving and the best citizens of the United States.

**A Month's Emigration from Liverpool**

On Friday the Liverpool Emigration Commissioners made up their returns of the emigration from that port for July. The vessels sailing under the Act were: — In the United States 31 ships with 142 cabins and 11,986 steerage passengers; to Canada 6 ships, 237 cabin and 1901 steerage; Nova Scotia, 4 ships, with 138 cabins and 732 steerage; South America, 2 ships, with 25 cabins and 57 steerage passengers; to Victoria, 53 cabins and 2.5 steerage making a total of 16,213 passengers, of whom 8,709 were English, 251 Scotch, 1,693 Irish and 5,557 foreigners of vessels not under the Act there sailed 29 carrying 731 passengers making the grand total for the month 16,944 being an increase over July 1871 of 3163, and an increase over the year, as compared with the same period of 1871, of 20,329.

Mr. Wm. Long of Lansing has lately brought out four Stallions, of the heavy draft Lincolnshire or Norfolk breed.

**Agricultural Intelligence.**

**Provincial Exhibition.**

When the thousands in Hamilton interested in the success of the Exhibition opened their eyes this morning, they were delighted to see Old Sol smiling by progressing through a sky flecked by scarce a cloud. Hopes are now entertained that the weather will remain fine during the week, and if it do, the attendance at this show will no doubt be even greater than it was on the occasion of the visit of the Prince of Wales to this city in 1860. Since that time the facilities for getting to Hamilton from all parts of the Province have greatly increased, and although we shall not, on this occasion, have the great additional attraction to the show of a Prince of the blood royal amongst us, we are to be honoured with a visit from a very popular representative of royalty, our new Governor-General, and may, therefore, expect many thousands of persons to visit the city who would not come to see the Exhibition alone. Already immense crowds are commencing to arrive, every train that has come in this morning, consisting of as many cars filled to their utmost capacity as the locomotive could drag after it at anything like a reasonable rate of speed.

A few articles for exhibition arrived as late as 10 o'clock this morning; nevertheless every department of the show was in such good order by eleven o'clock that the judges were able to commence their duties only an hour later than the time set down in the programme. It is frequently remarked that there is no use in going to more than one exhibition of this sort, one being very much like every other one. We venture to say, however, that here is no one who has visited the Provincial Exhibitions regularly for several years past who would not be able to discover many novelties in this. The present show is an excellent one in every respect, and the great expectations raised by the large number of entries made for it have been fully realized.

During the day about 3,600 persons visited the Crystal Palace and grounds, and by noon the whirl of machinery, the rick of sewing and knitting machines, and the melodious strains, proceeding from the musical instrument department, told of the exhibition being in full blast. Both inside of the grounds and out, the vendors of refreshment were doing such a business as made them hope of reaping as rich a harvest during the week as the most sanguine of them could have expected; but outside of the gate as much money changed hands during the day as would serve to carry on the business of a good sized village for the same length of time. Hundreds of the over-credulous were induced by the glowing mis-representations, delivered in that guttural tone which seems to be peculiar to a majority of the small showmen who are always to be found present on an occasion like this, to enter their tents for the purpose of being amused and delighted at the intellectual display of the pig that can play cards, the iron-fistful box constructor large enough to wall with a buffalo, or the beautiful accomplished and intelligent female of a ponderous beyond conception of hers, or a tale upon by the author that "faulst not never won a tar ballie" to "hev a trail" at smashing "Aunt Sallie's" nose by shying sticks at it, and not a few are led to invest a quarter in a vial of medicine which if the words of the seller are to be believed, is almost as efficacious for the preser-

vation of human life and for the removal of all fleshly ills as Don Quixote believed the famous liniment which he made use of on a certain occasion to be. Others are led to pay twenty five cents per box for pens worth about ten cents per box, their object being to draw, if possible, one of the prizes which the vendor of the pens assures his customers are contained in a large proportion of the boxes with the pens.

Among the visitors present to day at the show were Professor Lawson and Messrs Northrup and Brown, of Nova Scotia, who came here for the purpose of purchasing live stock for the Agricultural Association of that Province, of which they are members. Mr. James White, the President of the Ontario Association, also arrived to-day.

For the convenience of exhibitors and the public generally, an office has been opened on the ground for the receipt and delivery of letters and telegrams transmitted over the wires of the Montreal Telegraph Company. The post-office business is under the care of Mr. James Gordon, and that of the telegraph company is managed by Mr. M. Welch.

### HORSES.

There is a marked increase in the number of entries over those of last year, and also over any previous Provincial Exhibition held in this city. One prominent feature in certain classes is the great number of imported animals, which speaks highly of the enterprise and prosperity of our Canadian farmers. In many of the classes the whole of the animals shown would bear a very favourable comparison with any exhibition in Britain.

In class 1, blood horses, the show of horses is very meagre, and is inferior to last year's exhibition. The principal exhibitors are Mr. John Shedden, of Toronto; Mr. White, of Bronte; Mr. Linton, of Pickering, and Glennie & Co., of Waterloo.

In section 1, only two horses were on the ground. Mr. Linton's bay horse Warmambie, by Mountain Deer, dam by Touchstone. This horse is a well-bred short-legged horse, and likely to improve our stock of roadsters and saddle-horses. Warmambie gained several prizes in the north of England. Glennie & Co show J. Butler, bred in Kentucky, by Young Melbourne, dam by Florizel.

In Section 2, Mr. Linton exhibits his three year old horse Heir at Law, by Warmambie, which is a very useful-looking horse, but we expect will have to succumb to Mr. Shedden's fine horse Norlander, by Lightning, out of Jennie Ream, by imported Knight of St. George, winner of the St. Leger. Norlander is a beautiful bay, with black points, and has already received two first prizes at Provincial Exhibitions. He stood first favourite for the Queen's Plate in May last, but, owing to a slight injury, had to be laid up in his training.

The only colt shown in section three is Halistorm, by Thunder, dam Julia Adams, by Vandel, and in the following section is Hurricane, full brother to the former, both the property of Mr. Shedden. Mr. White also shows Reformer, by Luther, out of Annie Laurie.

The other sections are very poorly filled, and most of the animals shown have already been exhibited. We expected to have seen a much better turn out of blood horses, as a good many valuable horses have lately been imported into this country from the neighboring Republic. The judges in classes two, three and four had most of the horses paraded in the ring without giving any rewards, and, judging from the numbers and excellence of the animals shown in the various sections, the task of awarding the prizes is by no means a sinecure.

The heavy draught horses appeared to draw special attention. In section one there are sixteen entries, but only seven exhibitors. This section has always been well represented at our Provincial shows, but this year, as a whole, surpasses any former exhibition. The seven animals exhibited are imported. Mr. Bray, of East Guelph, shows Dundonald, a beautiful bay, powerfully built, and showing very fine action. Mr. Bray purchased this horse in Scotland last year, and is certainly deserving of credit in the selection of this animal. He also imported the horse Little Wonder, who, we are sorry to state, as already mentioned in this paper, died at Newmarket on Saturday last on his way to the Exhibition.

Mr. Long, of Lansing, York, also shows two excellent horses very lately imported from England. Both animals do credit to the importer.

The veteran importer and exhibitor of stock, Mr. Simon Beattie, of Markham, is represented in this section by a very compact, useful-looking, roan coloured horse called Border Chief. Mr. Shaw, of Bowmanville, exhibits the horse that gained the first prize at Kingston last year; but owing to the increased enterprise of our Canadian farmers in making fresh importations, we presume he will this year be placed further back on the list.

Mr. Hauey, of Beverley, shows his brown horse Champion, who still looks well, although advancing in years. Champion was bred by the well known breeder Mr. Kirkwood, of Shankston, Ayrshire, Scotland.

The three-year-olds are also very fine, and, as a class, superior to anything ever exhibited in Canada. Mr. George Cockburn, of Hamilton township, Northumberland, exhibits the horse which he imported a few weeks ago, and which gained the first prize at the Highland and Agricultural Society's shows at Kelso, Scotland, in July last. This is a very powerful horse, a beautiful dapple brown with black points, with the exception of a little white on the off hind leg. Mr. Harvey, of Beverley, shows a very fine bay horse with fine action and unequalled symmetry. We anticipate that both horses will stand well forward on the prize list. Mr. Fisher, of Huron, who formerly owned England's Glory, a winner of many prizes, shows an excellent animal imported from England. The heaviest horse shown in this section is Lord Haddon, the property of Mr. Calhoun, of Mitchell.

The arrangements in the showing ring and also the accommodation for the horses, are very complete, and reflect great credit on the local committee. The Judges will commence their awards at nine o'clock tomorrow morning.

The Judges commenced their awards at nine o'clock this morning, and, as we anticipated, Mr. Boag's horse Dundonald was placed first in the section for aged heavy draught horses.

In the three-year old section Mr. Fisher gained the first prize, Mr. Simon Beattie, of Markham, also exhibited a very fine young horse; Mr. Charles Douglas, of Oakridges, showed his brown horse Young Scotland, lately imported, Mr. John Bell, of East York, is also represented by a very useful-looking animal.

The section for two-year old stallions is well filled, there being over a dozen exhibitors, and most of the animals shown are imported from Britain. Mr. Mason of Tucker Smith, enters two very fine animals, and Mr. James Laurie, of Malvern, Mr. James Armour, of York, and Mr. Simon Beattie also show good horses.

The horses which come under the head of the agricultural class were also shown, and although not quite equal to the heavy draught, they made a very good appearance. Mr. Coulter, of Brampton, gained the first prize for aged horses with his brown horse Defiance, who was also first in his class at the Provincial two years ago. Mr. Teasdale, of Middlesex, secured the second prize; and Mr. Harvey, of Beverley, carried off third honours. Mr. John Crawford, of Scarborough, also showed a very fine strong horse, which we would consider better adapted for the heavy draught than the agricultural class. In the section for aged stallions for road or carriage, Mr. Paton gained the first prize.

Mr. Douglas, of Oakridges, showed Erin Chief, one of the finest road horses in Canada; he stands sixteen hands high, and can trot under 250. Many people thought this horse the best in the ring.

Mr. C. P. Reid, Toronto, exhibits Asbaugh George; and, although a very good horse, he failed to secure a prize. Asbaugh George shows many good points, and his stock are very promising. Mr. Simon Beattie exhibits two horses, both four year old and one of them gained a first prize at Kingston last year. The three year old carriage horses were not so numerous as we have seen on previous occasions. The following gentlemen, viz: Mr. Shoultz, Middlesex, Mr. Ludman, Wentworth, and Mr. Mason, Huron, showed very promising horses, and the judges experienced considerable difficulty in deciding as to the respective qualities of the competitors.

In section three for two-year old roadster horses, twelve animals were exhibited. Mr. Fisher, Colborne, Huron, gained the first prize with his imported colt "Tommy Peacock." Mr. Fisher's colt is one of the finest specimens of the English coaching horse perhaps ever imported to this country. We might also remark that Mr. Fisher is deserving of every thanks from the agricultural community for his valuable selections, and we trust his enterprise will prove a successful speculation in every sense of the term.

The yearlings were not so numerous as in the former class, and Mr. Long, of Lansing, York, gained the first prize with his imported colt "Tuckall." We are glad to see Mr. Long standing forward on the prize list, as he has spent a great deal of time and money in importing horses to this country.

The entries for French horses were rather limited, but some good specimens of the hardy French Canadian appeared on the ground. Messrs. McFoy and McKellar gained the first prize with their appropriately named horse Champion of France.

In class four, section three, for two year old stallions of the heavy draught breed, fifteen young horses were entered. Mr. Charles Mason, of Tuckersmith, was placed first with his fine black colt imported in August 1871. Mr. Simon Beattie and Mr. James Laurie, of Scarborough, also exhibited very promising young ones. We were glad to see Mr. James Armour, of York Mills, on the ground with his bay colt, which he purchased in Scotland in July last. Mr. Armour's horse looks exceedingly well, considering that it is only a few weeks since he was brought to this country, and experienced a rather stormy voyage across the Atlantic. Mr. Kemp, of Weston, lost a very valuable animal during the same voyage.

In section for yearlings eleven colts were entered, and the whole of the prizes were gained by imported animals. Mr. John Jackson, of Chinguacousy, was fortunate in carrying off first honours, Mr. Wilson, of

Whitby, was placed second, and the third prize was awarded to Mr Long, of Lansing, York.

The horses entered for the diploma of the Association for the best stallion of any age were now brought into the ring, and the coveted prize was awarded to Mr. Doug's horse.

In section three for heavy draught tilles, three years old, only six animals were entered. Mr. South, of Glanford, gained the first premium, with a fine bay mare bred by exhibitor, and Mr. Gerie, of Dundas, secured both second and third prizes.

In sections seven and nine we were glad to notice our old friend, Mr D. McConnachie, of Clarke, again on the field, and both his brood mare and two-year-old filly were deservedly admired. The well-known breeders, the Messrs. Beith, of Darlington, were also on the ground, and were successful in carrying off honours. Mr. Hutchinson, of Toronto Gore, gained the first prize in section nine, with a very fine brood mare, a winner of many prizes.

The carriage horses, sixteen hands high and upwards, were now brought into the ring, and very soon brought a large concourse of spectators around the enclosure. There is no denying the fact that a little trial of speed excites the enthusiasm of the spectators. In this section there were twenty-one entries, and some good pairs were shown. Mr. Binger, of Palermo, was lucky in gaining the first prize, with a pair of good stepping browns. Mr. Vansickle, of Jerseyville, deservedly secured second honour, with a pair of very nice chestnut mares, four and five years old, and full sexters. Mr. Forsyth, Dundas, and Mr. Martin Jordan also showed very useful teams.

The next on the programme were the driving horses under sixteen hands. Mr. Davis, of Richmond Hill, showed a pair of nice bays, well matched, and good movers, and he was successful in carrying off the first prize—Mr. Nelson Playter was placed second.

In section thirteen, for single carriage horses, the catalogue showed one hundred and fifteen entries. Mr. Furnivale, Hamilton, showed an excellent driving horse by Allandale. The well-known host of the Royal, Mr. E Irving, also showed a high stepping, slashing bay gelding. Mr Gregory was represented by a good-looking grey mare.

In section fourteen for saddle horses there were fourteen entries; Mr. Smith, V. S., Toronto, gained the first prize, with a handsome six-year old gelding by Ulverston. Mr. Wm. Hendrie, Hamilton, was placed second, and Mr. Swartout, of Norwich, third.

A new and interesting feature in the horse ring was a pair of Newfoundland dogs attached to a handsomely got up diminutive carriage, and driven by a young lady of eighteen months.

The judges have now nearly finished their awards, and their decisions appear to have given general satisfaction.

#### CATTLE.

**DURHAMS.**—The show of Durham cattle, thoroughbred, and grade, most undoubtedly surpasses any former exhibition that we have ever attended.

The numbers seem to be large, and the quality are undoubtedly excellent.

We observe that not only are the herds of our more noted breeders fully up to the usual mark, but that many new breeders have come into the field, evidently fully determined to run close upon the heels of the heretofore successful exhibitors in the race for premium notoriety.

The accommodation for cattle is good, and it appears that the exhibitors are well provided with the necessary food and bedding, while we hear none of those common complaints of want of water that are often heard upon the various exhibition grounds throughout the country.

The sheds are open, airy, and yet at the same time were protected from storms; whilst the extent of the ground (nino acres having been this Fall added) is such that the stock will not in any way interfere with the crowd which may be expected on Wednesday and Thursday.

Among our well-known breeders we observe—Messrs. John Snell & Son, Edmonton; George Miller, of Markham; John Miller, Pickering; W. Telfour, of Guelph. We also noticed some very fine cattle shown by Col. Taylor, London; John M. Bell, Burnside Farm, Pickering; Simon Beattie, J. R. Hunter, from Centre Wellington; Humphrey Snell, Clinton, and many others of lesser notoriety, but amongst whose herds we noticed very many excellent cattle.

As to the favourite breeds in Canada it would appear from this year's exhibition that opinion is about equally divided between Booth and Bates—there being excellent specimens of each breed upon the ground. John Snell, of Edmonton, shows in the place of "Loudon Duke," an imported bull, "British Baron," 3 years old, bred by and bought from Colonel Towneley, Lancashire, England. It will be remembered that "Loudon Duke" carried off many laurels at Kingston, where he was opposed by several excellent bulls. He was the winner also as bull of "The Herd," and, having been sold this year, his place will be taken in competition for such prize by the imported "British Baron." This bull is really a picture, stately and fine; he would never disgrace a Royal in England.

Being deep and broad in front, he is well filled out behind the shoulders, well ribbed up, has a very perfect barrel, and is carried out straight and true from neck to rump, with very square buttocks. On head, neck and shoulder, he shows the fine characteristics of the Booth breed, and is every inch of him a Towneley bull. His colour is also very good, being a dark red roan. We were always great admirers of "Loudon Duke," of "Loudon Tom," but we congratulate the Messrs. Snell on the fresh blood that they have imported for their stock in the person of "British Baron." The peculiarity of "Loudon Duke" was his certainty of transmitting his colour, and style to his progeny, and this is clearly shewn in several young animals, heifers and heifer calves, shown by Messrs. Shell. We see "Clara Barton" and "Nanorie Rice" and they look if anything better than last year.

These two were beaten at Kingston, but when shewn against the same animals at the Central in Hamilton, they took first prizes. We trust they will uphold their laurels, for they are certainly very handsome cows.

We cannot leave this herd without noticing a very handsome yearling heifer, "Crimson Rosebud" being another of Loudon Duke's stock; and in her are fully developed the many good qualities of the father—long, low and roomy very fine in head, with excellent dewlap and good colour.

We see John Miller again shews "Oxford Mazurka," who is looking well. He has also the two cows shown at Kingston, and we point to them as another proof that the stock at Kingston last year were undoubtedly above par, viz., "The Rose of Strathallan" and "Cherry Bloom;" and we also particularly

observed two bull calves, both by "Oxford Mazurka," viz., "Isabella" and "Cherry Bloom."

We regret that we do not see "Fawsley Chief" on exhibition, but some of his stock are here.

We may notice in passing that there is an immense number of stock lately bought by Canadian breeders from Mr Cruickshank of Sittydun, Aberdeenshire—strains from his stock being found in a large number of our herds.

Humphrey Snell, of Clinton, shews Dixie Duke, 315—aged—bred by Jno. Snell of Edmonton, got by Duke of Bourbon. We do not think much of him, he has great size, but is clumsy and somewhat coarse.

J. R. Hunter, of Alma, Centre Wellington—a comparatively young exhibitor shews a very fair herd—having 9 short horns and 6 good grades.

He has an excellent and almost pure Booth blood. His name, Knight of Wallerby, stamps his breed, being a scion of the excellent Wallerby family of England. He was bought from Mr. White, of Clinterty, Aberdeenshire, and was got by Baron Booth, (21,212).

Mr. Hunter's herd is mixed, some Booth and some Bates.

He shows a very handsome 2 year old bull, Oxford Duke, that took diplomas at London and Guelph in the yearling class.

Mr. Beattie shows a bull, Duke of York, with undoubted signs of Bates in his breed, a fair specimen of the same.

We were much pleased with a two-year old bull, "Doctor," exhibited by John M. Bell, Burnside Farm, Pickering. This bull was imported by Mr. Cochrane, Quebec. He is a very promising animal, with fine muzzle and head, good colour, and well put together. We doubt not but that this bull will make a decided mark in our future premium lists.

George Miller, of Markham, has an excellent show of cattle on the grounds. He shows "Forest Duke," 3 years old, by famous old "Bell Duke of Oxford."

We formed a very favourable opinion of this bull when he took the first prize last year in the two-year old class, and he has grown in such form as to fulfil our anticipations in regard to the value of this bull.

His one year's growth has been very satisfactory, and he will be a heavy well-formed bull.

"Bell Duke of Oxford's" stock are in full force, there being "Lady Belle," dam "Portia," an excellent cow, but with bad colour, and a yearling heifer, "Necklace 5th," also a heifer calf who descends from "Star of the Realm."

"Foressie," two-year old heifer, another importation from Mr. Cruickshank, is in good order. She took first prize at London.

A four year old "Xmas Eve," "Necklace 4th," "Bell Duke of York 2nd," and "Lady Belle of Oxford," all from "Bell Duke of Oxford," show distinctly his grand virtues—good shoulders and great squareness of buttock.

Wellington shows "Young Scotland," a very handsome yearling calf, having just turned his year by one month. He is from "Star of Peace." Imported "Star of Peace" is by "Forth," 17866, bred by Sir William Stirling Maxwell, Bart. This last celebrated bull was first at the Highland Society's show at Kelso, the gold medal at Stirling, the first prize at the Royal Agricultural Show at Battersea—first at the R. A. Show at Newcastle and of the fifty-guinea challenge at Aberdeen. He



also shows Clarendon, 7 months old calf by Armour Bearer, (imported); dam, Bes-sie.

He has a nice calf, very square behind and exceedingly well fitted and carried out for so young a calf.

We cannot pass by two bull calves shown by Col. Taylor of London. These calves are Duke of Springwood, 10 months old, by Proud Duke; dam, 7th Duchess of Springwood and "Duchess of Brocktown," 10 months old, by "4th Duke of Geneva," dam "Duchess of Richmond." These two calves were wonderfully developed for their age, and they have all the appearance of the pure Bates. They are a very dark red roan, are well raised at the buttock, and every appearance in front of improving in this their one defective point at present. "Springwood's" weak point is his neck, while "Brocktown" is not as good behind.

The Hon. David Christie shows a few cattle which, however, to our mind, hardly come up to his old standard.

He shows "Knight of St. George," a very excellent Booth bull (26544), is a nice bull in good fresh order—was bred by Carr Stay House, Yorkshire; dam, "Windsor Queen" by "Windsor" (14013)—also "Lord Blythe" got by "Knight of St. George."

#### DEVONS.

**BULLS.**—In aged Bulls, 4 years and upwards, there were only three entries, but only two were exhibited.

Between the two bulls who came before the judges, we should not hesitate for an instant "Hartland," the property of George Rudd, Puslinch, is an almost perfect specimen of the Devons. Just enough curl on the neck to stamp his purity; proportions excellent, and colour deep red, line in the horn, and bull all through.

"Geur Grant," his opponent, is too leggy, and rather fault.

Geo. G. Mann, of Bowmanville, exhibited, as usual, some excellent individuals; while John Income of London, Thos. Gray, of Oshawa, Geo. Rudd, of Puslinch, W. Atcheson of Guelph, and W. & L. Courice, of Harham, filled the stall with some very nice specimens.

It is evident that the Devons are rather increasing in popularity.

**AYRSHIRES.**—We think we never saw a better show of Ayrshires in Canada than were on the grounds to-day. The two brothers Jardine show several very fine animals, among which we noticed a very handsome two-year-old Ayrshire Bull, imported and bred by H. Wilson, Ayrshire, Scotland. In the same herd was a cow, "Ayrshire class," bred by W. Muir, Ayrshire. This Mr. Muir has for many years been one of the most successful breeders and greatest prize-takers in the old country, and throughout this continent the mark of his stock has been made in many herds.

We may add to the above as worthy of note in Mr. Jardine's herd a handsome three-year-old heifer, yearling heifers, three calves, and particularly a very handsome bull calf.

Wm. Rodden, of Plantagenet, Prescott, shows a large herd eleven in number, all handsome cattle, and for Ayrshires in very extra good order.

Compton, near Quebec, if not well represented in Durhams this year, shows an excellent sample of what can be done there in the way of Ayrshires, in the herd exhibited by John S. Gibbs. His herd are very uniform and excellent in condition, form and colour.

Considering the very long journey from near Quebec, we were particularly struck with their fresh appearance.

He shows a bull "Mars" to our mind the gem of the Exhibition. Forget his size and he is like a first class Durham. He is very perfect in his joints—long raking body—very square in buttock—with no fall away at the tail, the latter being a very common fault in Ayrshire bulls. We understand that he has been a very successful prizetaker in the States, where they carry out Ayrshire breeding far more generally than in Canada. Thyme is a very promising strongbull, out of Glatrice, (295) 585; his dam, Nannie, is out of Mars Prince Hubert, from the same bull, shows particularly the depth of shoulder of his father, and will grow up a very handsome animal. Ere leaving this herd, we feel bound to notice a yearling imported, Lass of Gowrie. Altogether, the show of Ayrshires is far better than any that we have seen at our Provincial Exhibitions, and very far ahead of those at Kingston last year. We never saw a large collection of Ayrshires in such good order as those in Hamilton this year. We look upon these cattle as very difficult to regulate. It is so difficult to combine size and beauty in the Ayrshire, and on the other hand, in seeking beauty and symmetrical formation, it is hard to prevent the individual from degenerating in size. From some specimens at the fair, we should say that symmetry had been sadly sacrificed to size.

Mr. Cochrane's Ayrshire herd is also represented by some fine females. There were many other extra specimens, for a notice of which we cannot here find space.

**HEREFORDS.**—As usual, F. W. Stone, of Guelph, was the largest exhibitor in this class, having 21 head in the stalls. His only opponent was Geo. Hood, also of Guelph, who had a few specimens, and good. The Herefords were all very good, and being the result of the two largest Hereford exhibitors.

**GUELPH.**—The chief exhibitors were, as usual, Wm. Hood and Thomas McCrae, both of Guelph, and we saw some very handsome cattle by Henry C. Tew, of West Lamboro.

**GRADE CATTLE** were fairly represented; The counties of Wellington and Wentworth showed nearly all.

**FAT CATTLE.**—All were good—but the actual exhibitions very much less in number than as entered.

We particularly noticed a yoke of Durham steers, shown by J. S. and Geo. Thompson, of Whby. We regret that we could not learn their weight, but we should judge them over 20 cwt. apiece.

There were two very fine fat Herefords belonging to a Mr. Coutts.

Another handsome yoke of steers, which we understand afterwards took the first prize, was shown by J. S. Armstrong, Eramosa, Wellington. These were such cattle as we should expect to see tuned out by the Messrs. Armstrong, and were probably finer fat cattle than those exhibited by the same gentlemen last year. This yoke, one a Hereford and the other a Durham, showed the different style of these two breeds very distinctly. The Hereford, we should say, was rather larger in bone, and doubtless will not make the same amount of beef as the Durham.

We can readily understand the great difficulty that the judges had in adjudicating between the yoke shown by the Messrs. Thompson, of Whby, and that shown by Messrs. Armstrong, of Eramosa, Wellington.

#### SHEEP.

The show of sheep was very large, and some of the animals exhibited in the various classes would have been formidable competitors even at the English Royal Agricultural Society's show. The Cotswold sheep were remarkably good, and very numerous; and we may remark of this class that it appears to find very great favour with Canadian feeders, because they are not only found to be abundant producers of wool, but also good mutton, and as the quantity of both is large they are found to be very profitable sheep on Canadian pastures. This fact is borne out by the action of several sheep-feeders who were exhibitors, and we may mention a circumstance that we heard in the show yard yesterday, to the effect that Mr. Millar, a breeder and importer, went to the old country this summer, and imported between thirty and forty rams and ewes, many of which were of such excellence that he sent them to the show yard as competitors in the various classes to which they belonged. Since this class of sheep were first introduced into this country, they have increased in favour every year, and when we mention that the catalogue contained nine entries for the Prince of Wales' Prize, consisting of a flock of Cotswold sheep, comprising one ram, one ram lamb, five ewes, and five ewe lambs, it will be seen that the competition was very keen. The successful competitors were Messrs. J. Snell & Sons, who have already won this prize for four years in succession. For Cotswold rams, two years old and over, three prizes were offered, and the entries amounted to 24. Amongst the competitors, Mr. F. W. Stone, Guelph, Wellington, showed excellent animals, as did Messrs. Snell, Edmonton, Peel. These animals were in the highest condition of flesh, and although they had a coat of wool of only about four months' growth, they looked long-woolled when standing, but showed the quantity of mutton that each carried by the spreading of the body when the animal lay down. Mr. Neal McKay, of Darlington, Durham, and Mr. James Russell also showed some fine sheep in this class. For shearing rams of this breed, three prizes were offered, and as competitors no less than 33 entries appeared; Mr. Stone, of Guelph, Messrs. Snell, of Edmonton, Peel, Mr. James Russell, Markham, York, Mr. John Miller, Brougham, Ontario, and Mr. Wm. Canfield, East Oxford, being the most extensive exhibitors. Many of the animals shown exhibited a rare degree of merit, and, we should imagine, occasioned the judges a good deal of trouble in deciding which was best. The entries of Cotswold ram lambs for the three prizes offered amounted to 47, and amongst the competitors, Messrs. Snell, Stone, Russell, Miller, Beattie, and Miller were extensively represented, while other exhibitors showed sheep that appeared to have all the qualities necessary for the production of good stock. The section for two Cotswold ewes, of two shears and over, included 22 entries, in which Messrs. Birrell and Johnston appeared as competitors with

those already mentioned as importers and breeders of sheep, and with a few exceptions the above named exhibitors contributed an excellent show of Cotswold shearing ewes and Cotswold ewe lambs. A very interesting section of the Cotswold class was that devoted to pens of sheep consisting of one ram, two ewes, and two ewe lambs, for the best of which a prize of \$20 was offered, but the competition was principally confined to the same breeders as have been mentioned in connection with this class of sheep, and the merit of each pen showed how much attention is being paid to the rearing of Cotswolds.

The Leicestershire sheep will, perhaps, come next in the order of favour, if not in the order of merit, but probably that, too, so far as the experience of Canada breeders and feeders has gone. Indeed, since these sheep were first brought to this country they have progressed in favour rapidly, for it has been found that they have not degenerated on the dry pastures of Canada. There were three prizes offered for Leicester rams of two shears and over, and thirty-six entries, and they represented nearly as many names. No doubt the fact that these are great wool-growing sheep, with small bone and good mutton thereon, has given them great favour with many; but, at all events, men who are partial to Cotswolds and Southdowns have also a liking for this class of sheep, and they are growing in favour every year. Shearing rams were well represented, there being no less than 52 entries; and Wm. Canfield, East Oxford, Henry Hammonds, Brantford, Patrick McClerie, Walpole, Haldimand; John Snell & Sons, Wm. Douglas, Onondaga, were the most numerous exhibitors. In this section the competition was very keen, and the admirers of sheep found much for admiration. The Leicester ram lambs, for which there were three prizes offered, numbered 83; in such a number we would not presume to say where the greatest amount of merit lay, and we imagine before the judges have got through their work they will find a good deal of trouble in awarding the prizes. Messrs Snell, Douglas, Russell, McNair, Christopher Walker, Hammond and Woods were well represented as enterprising breeders of sheep. The show of Leicester ewes, both shearing and two shears, was large, and the ewe lambs came up to any previous exhibition.

Lincoln sheep numbered 47, and were not extensively owned. Mr. Richard Gibson, of London, being the largest exhibitor.

Medium-wooled sheep were more numerous shown than in any previous year, and it is pleasing to see Southdowns growing in favour, as they are good wool growing sheep, and for mutton cannot be beaten. Hampshire sheep were more numerous than Shropshire or Oxfordshire; and we doubt the wisdom of ignoring the Shropshires, inasmuch as within the last ten years, since proper attention has been paid to this breed of sheep, none have been found more profitable or better worthy of attention than these. The Spanish, French, and Saxon merino sheep are not now in so much favour as they formerly were, and, consequently, the fine-wooled were outnumbered by the others. The show of fat sheep was good. Messrs George Hood, Guelph, George Weldrick, and James Russell being the most numerous exhibitors; and certainly some of the specimens were well entitled to be classed as among the "fat" animals of the show.

#### PIGS.

It is remarkable in more senses than one with what favour pigs are always viewed at public exhibitions, for, though they do not

produce the most sweet smelling odours, even ladies, whose olfactory nerves might be considered the most delicate, are constantly found amongst their most careful scrutineers. It may be that this is owing to the domestic relationship of the animal in that section of the old country where the pig is looked upon as the "gentle man who pays the rent;" but, from whatever cause, certainly the specimens in the show-yard are worthy the attention bestowed upon them. If we except the county of Berks, in England, it would be difficult indeed to find a better show of Berkshire pigs than the Hamilton Exhibition affords. Beginning with the boars of one year and over, we have seldom seen a finer Berkshire specimen than that exhibited by the Hon. Geo. Brown, Brantford—an animal only 17 months old. It is not so large as some in the show, but for symmetry it has no equal; though there is another boar pig shown by John Snell & Sons, of Edmonton, Peel, that comes into formidable competition with it; and one shown by R. D. Foley, Bowmanville, Durham, that for its size has the best feet and legs we have seen of late. We shall be much surprised if the judges do not award the prizes in the order we have named them above. Mr. Wright, of Sandwich, had a fine, healthy-looking animal that some of the spectators admired very much, and George Roach, of Hamilton, had two fine specimens of the breed. The young boar pigs were numerous, and as Mr. Roach was such an extensive exhibitor, we should say that he has taken quite a fancy to the black short-legged Berkshires. The animals shown by Samuel Mason, Trafalgar, Halton, were very good for their age, and Thomas Blanshard, of Nelson, Halton, showed a perfect beauty of ten months, imported this year from the farm of Her Majesty Queen Victoria. The sows of one year and over numbered 31, and, taken as a whole, were very good. Joseph Featherston, of Toronto, Peel, was an extensive exhibitor, as was Mr. George Roach, of Hamilton, whose name we have had occasion to mention so frequently. John Snell & Sons, of Edmonton, had some long pigs that looked as if they would cut up to great advantage, and Mr. Wright, of Sandwich, had several well-made pigs in this class. Simon Beattie and E. H. Irving were exhibitors whose specimens of Berkshires were much admired; but for young sows of this breed George Roach, of Hamilton, was in excess of all others in the number of his entries. The animals shown by E. H. Irving, Hamilton, were very good, and Simon Beattie, Pickering, Ont., showed a fine young sow imported this year. Snell & Sons were also well represented, but were we to mention each animal in the large show of Berkshire pigs that would command the critical attention of judges at county shows in England, we might enumerate every animal in the Berkshire class of the exhibition. The show was much larger than that of last year, and we might say that the improvement in breed was quite as great as in the number of animals exhibited.

The Suffolk pigs, which are a class with little hair and fine bones, were very good specimens, but they were not as numerous as we could have wished to see. This class of pigs, however, has not long been introduced into the country, but since they came they have been rapidly increasing in favour. Mr. Jacob Terryberry, of Glanford, George Roach, John Cuming, Joseph Featherstone and others exhibited fine animals in the class for boars of over one year, while Mr. Featherstone was a large exhibitor of young boars, as was Mr. Main, Mr. Cuming and Mr. Wright. Breed sows were not numerous, but young Suffolk

sows were numerous in the competition for the three prizes offered, and the exhibitors were principally gentlemen whose names have been already mentioned. Essex pigs were shown by Mr. Roach in great numbers, but his competitors for the prizes were not numerous.

There was a fair show of other small breeds, exclusive of Suffolk, Berkshire and Essex, but we saw nothing in the exhibition calling for special attention, except that Mr. Featherston appeared to have a monopoly in this special class.

Yorkshire and other large breeds found excellent representatives in the specimens wholly and panted in a state bordering on suffocation—a state, however, that appears to characterise all the porcine animals that we have ever seen in a show yard. Mr. Main, judging from the number of animals he had entered, appears to have a great fancy for this breed of pigs, and we doubt not he will find them profitable as bacon producers.

It should be stated that with a view of encouraging largely the importation of improved stock, the exhibitor of any male animal imported into this Province from Great Britain or any foreign country, and not previously exhibited, which shall take the first prize in any of the above classes, will be paid by the Society three times the premium offered in the list; the exhibitor of any female animal imported and not previously exhibited, taking the first prize, will be paid double the amount offered. This is an inducement for exhibition that may well have contributed to the success of the show.

#### POULTRY.

The show of poultry was very large, and in most of the sections the specimens exhibited were of a very superior character. Of course, in any district, there will always be a number of poultry fanciers, who pay more attention to the breeding of birds than any other class of persons, the result of which is, that while an exhibition of poultry produces perhaps a very large collection, they are owned only by a few. However, those who take any interest in the rearing of fowls had an opportunity of seeing in the show yard to what perfection they can be brought with proper care and attention, and no doubt the exhibition of such fine specimens of poultry will stimulate many to give more attention to the rearing of fowls.

The Dorkings, which are perhaps the most profitable kind of poultry that can be reared, formed a very good show. H. M. Thomas, Brooklin, Ontario; W. N. VanIngen, Woodstock, Oxford; W. M. Smith, Burford, Brant; John Boque, Westminster, and James A. Miller, St. Catharines, Lincoln, showed some trio coops of white Dorkings, which were very much admired.

The coloured fowls, in which the above gentlemen were also exhibitors, were also very good, but the specimens shown by Mark Hill, Hamilton, Wentworth, and John Boque, Westminster, were especially good.

There was a good show of Polands, and the white-crested were remarkably fine. Mr. Thomas and Mr. Boque being especially fortunate in their selections for exhibition; no better specimens were shown. The goldens were also good; James A. Miller, H. M. Thomas and John Nunn, Toronto, York, showing some trios of great merit. The competition was very keen.

The silver Polands were very beautiful, and were principally owned by exhibitors already named; but in our opinion John Boque and J. W. Johnston, of Grantham, Lincoln, produced the best in the show, al-

though there were none that could be considered unworthy of the exhibition.

Game birds are always objects of interest, and the specimens were very numerous, though in some cases the birds did not appear to be of unmixed blood. However, there could be no doubt about many of the reds, blacks, blues, and browns. Conspicuous was a pair exhibited by Edward Collins, of Dundas, Wentworth, and imported this year; and Jas. A. Miller showed another excellent pair, that ought to stand well with the judges.

The duckwings were not very numerous, but considering that in most districts they are not plentiful, they had a fair representation; Mr. Miller showing one particularly good pair, and Mr. Whyte, of Hamilton, W. H. Van Ingen, Thomas Furlong, Hamilton; Daniel Allen, John Boque, and A. Terrill, of Wooler, Northumberland, being well represented.

There were five pairs of Pile game fowl, but we noticed nothing concerning them calling for especial comment.

The Cochon breed formed quite a show of itself, and it is wonderful to see the extent to which this class of poultry has progressed in public favour of late years. Coops of cinnamon and buff were numerous, and the birds were very large; J. W. Johnson, H. M. Thomas, and John Forsyth showing the best in the yard. The same may be said of the partridge breed, and the white and black, all of which were good.

The Light Bramas were very superior, especially those shown by J. W. Johnson and John Boque, while Mr. Thomas, of Brooklin, and others, exhibited specimens deserving of great attention.

Dark Brahmas, which were shown in coops of three, were best as owned by Mr. Thomas Daniel Allen, Galt, Waterloo, and John Forsyth, Toronto, and the competition for the prizes must have been very close.

The Spanish fowls were not very numerous, but in the section for black and white-faced some good birds were produced by W. H. Van Ingen and some other exhibitors. The white Spanish were also very good, those especially shown by Mr. Thomas.

The Hamburgs are always an interesting section of a poultry show, and the golden-pencilled, though not numerous, were very fair specimens. The silver-pencilled were also good, especially those shown by Mr. Nunn, of Toronto. In the competition amongst the golden-spangled Hamburgs the contest was a keen one, Mr. H. M. Thomas taking the lead, Mr. Nunn and Mr. Study, of Guelph, Wellington, standing in a doubtful position to each other in the order of merit. Of silver-spangled Hamburgs, there was a very fine show, and certainly no class of fowls can look more beautiful than these do. Mark Hill, of Hamilton, showed three birds that were real beauties, as did John Boque, and several others.

Mr. Thomas, of Brooklin, Ontario, may be said to have that part of the exhibition to himself which was devoted to Crevecoeurs and La Fleches, and he was also an exhibitor of Houdans, but in the latter section birds were shown of greater merit than his, especially by John Boque.

And now we come to that spirited breed of little birds, Bantams, that will fight either among themselves or with any breed of the feathered tribe. Nothing could be finer than the specimens of black reds shown by James A. Miller, of St. Catharines, and also a pair of game duckwings. Those beautiful little birds, the Sebrights, were fully represented, and the white and feathered-legged Bantams were also

shown in goodly numbers. These comprised some of the most beautiful birds in the show; John Boque and Thomas Harper, W. A. Forfar, Scarborough, York, and Thomas Friendship, exhibiting the best specimens in the respective classes.

There was a section for any variety of fowl not specially classed, and the white Polands shown by H. M. Thomas, were really very fine. Mr. Nunn, and Mr. Butterfield, of Edmonton, Peel.

The turkeys were the largest that we have seen, and the bronzed birds shown by J. W. Johnston and James A. Miller were first-class. Mr. Johnston had the two heaviest turkeys in the show; and James Vine, Grantham, Lincoln, and J. W. Bussel, Trafalgar, Halton, showed good birds.

Geese at this season of the year are always shown to advantage, and epicures who indulge occasionally in the animal roasted, believe that Michaelmas is the only season of the year when it can be tasted in perfection. The size to which the birds of this class shown had attained, would, however, indicate the presence of more fat when cooked than might be agreeable; but certainly in shape and feather they looked all that could be desired as healthy poultry. John Cullis, Hamilton Tp., Northumberland, and J. W. Russell, Trafalgar, showed some excellent common geese, and the Chinas of J. W. Johnson, of Grantham, were equally good.

The ducks were better in quality than they were numerous, though the show was in no respect poor. The Aylesburys of Mr. Sturdy, of Guelph, Mr. Hendrie, of Hamilton, were very good, and the Rouens were also large and well coloured; Mr. Sturdy, Mr. Bethel, Mr. Rowatt, N. Dorchester and Mr. Johnson showing some excellent specimens. Mr. Miller, of St. Catharines, had some good birds as well as the exhibitors of ducks already mentioned, but as they were all low down, and the place allotted for the poultry show was too confined for the number exhibited, scarcely anything was seen to advantage.

Guinea fowls and pea fowls were shown in the exhibition, but they were not seen so well as if they had more room. Mr. Featherston, of Toronto, Peel, Messrs. Smith, Burford, Brant, and Mr. Hinman, of Crafton, were the principal exhibitors of these.

A coop of English pheasants was shown by H. M. Thomas, Brooklin, that attracted much attention; and the exhibition of pigeons was large both in numbers and variety, Mr. Mark Hill, of Hamilton, being a very large contributor of the carrier, pouter, tumbler, jacobins, fantails, barbs, and other varieties; and against him as competitors were Mr. Nunn, of Toronto, York; Mr. Boque, Westminster, and Mr. Johnston.

There was a capital show of chickens, including Dorkings, Bramas, Cochins, Houdans, Hamburgs, Polands, and game birds in all their varieties, and in the various sections there were no end of specimens to be admired; though to the uninitiated some of the birds, from the state of their plumage occasioned by rubbing against their cages for some days, gives them a tawdry appearance that ill assort with the praises that connoisseurs bestow upon them. Some of the buff, as well as of the partridge cochin chickens shown by Mr. Thomas, of Brooklin, were of enormous size, and the chickens of the Houdan and Hamburg classes, shown by Mr. Johnston, Mr. Boque, and Mr. Nunn, were also very fine.

As extra entries there were pens of Angora rabbits, French hares, Bremen geese, and other curiosities that were much admired by those who had leisure; and altogether the class was very interesting, but had not enough space.

## APIARY DEPARTMENT.

**HONEY.**—The competition in honey is fully equal to former years, which is far more than could have been expected considering the great mortality among bees last year. Altogether there are nine entries, and most of the honey exhibited is of very fine quality. The names of the successful exhibitors are as follows:

1st prize—Honey in the Comb—H. M. Thomas, Brooklin; 2nd, J. G. Ptolemy, Brooklin; 3rd, Isiah Bere, Hamilton; 4th, Wm. McEvoy, Woodburn.

Clear Honey—1st prize, Wm. McEvoy, Woodburn; 2nd, J. L. Armstrong, Guelph, 3rd, H. M. Thomas, Brooklin; 4th, J. L. Taylor, township of Barton.

**BEEHIVES.**—The competition in Beehives is not so great as in former years, although there are several entries. Nothing really new, however, has been brought forward this year. Mr. P. Nicolle, of Lindsay, again exhibits the Economic Hive, the dimensions of which have been somewhat enlarged, which was quite necessary. We still think this hive, like most of the others exhibited, too complicated.

Mr. Lotic, of Cobourg, is again in the field with the "New Dominion Hive." The frames in this hive are so arranged as not to hang on bearings, like most frame hives, but rest on their bottoms, their sides or edges coming in contact. We have strong objections to this construction of frames.

Mr. Otts of Arkona exhibits a hive which he calls the "Otts Hive." The honey base contains movable frames, making his hive a kind of two-story hive. We think this hive would be greatly improved by putting more frames in the body of the hive and removing the bar that passes through the centre of the frame.

A. C. Attwood, of Vanneck, exhibits the well known Thomas hive, with some changes, in the construction made by himself, which he claims as improvements. We hope the advantages gained may fully compensate him for the extra expense in construction. Mr. Attwood also exhibits a swarm of bees in a model hive, and an Italian Queen, which are the only ones on exhibition.

J. H. Thomas is also on hand with his hives, which, however, are not entered for a prize. He having taken first prizes for seven years, gave notice in 1870 that he would not again enter for a prize. This hive is too well known to need any description. It is the least complicated of any hive on exhibition.

**HONEY EXTRACTORS.**—There are three of these on exhibition, though only two are entered for extra prizes, as Mr. Thomas does not enter his for a prize. They are a German invention, and have become a necessity to every bee-keeper who uses frame hives. They all work on the same principle, but vary in construction; either will extract the honey without injury to the combs, which may be returned again to the hives and refilled by the bees, which operation may be repeated as long as the honey harvest continues.

Mr. H. A. Schoenan, of Mildmay, has on exhibition what he calls a condenser, for the purpose of putting on the top of a hive in winter, to condense the vapor arising from the bees and secure it in the condenser, and thereby keep the bees dry. We have no confidence in this condenser as being of any practical utility, but it can do no harm to give it a trial. The names of the successful exhibitors are as follows:

1st Prize: Mr. A. C. Attwood, of Vanneck. 2nd: Mr. P. Nicolle, of Lindsay, 3rd: Mr. Geo. Otts, of Arkona.

## HORTICULTURAL DEPARTMENT.

## FRUIT AND FLOWERS.

The arrangements for exhibiting the fruit and flowers are better than they have ever been before. Instead of crowding them into the same building with the vegetables and grain, as has heretofore been the practice, a shed, some two hundred feet long and forty feet wide, has been erected so as to be entered from the Palace building, arranged with double-centre table and tables on each wall, upon which the fruit and flowers have been placed in more than wonted profusion. The exhibitors in this department are indebted, we believe, to the indefatigable president of the Fruit-Growers' Association for this much needed improvement in the arrangements. If he had done nothing more in the interests of growers of fruit than to secure this much needed accommodation, he would be deserving of their lasting and grateful remembrance.

Upon the centre table the collections of ornamental plants are arranged, flanked on each side with fruits. In these collections are some very beautiful and interesting plants. The Ferns are well grown, and in their curiously cut and graceful leaves form a very interesting feature. The many-coloured leaves of the various foliage plants, mingling with the many hues of green and numerous tints of blossoms, contribute much to the beauty of the whole. Coleus plants with many coloured leaves, all showy and challenging the observation of the most careless passer-by, blend harmoniously with the gorgeous Crotons, and more modest, but not less beautiful Caladiums. Some very fine specimens of *Datura Arborea* in full bloom attracted much attention on account of their large, white, trumpet-shaped blossoms. But an enumeration of all the beautiful plants staged on this table would be only wearisome. Yet the effect produced by the beauty of these plants placed through the entire length of the Hall is most happy.

The truly splendid samples of pears which were shown at this Exhibition were highly creditable to the growers, and prove that some parts, at all events, of our land are well adapted to the cultivation of this delicious fruit. The prizes were mainly carried off by growers from Hamilton and vicinity. The Bartlett's were most magnificent samples; and that most valuable pear for general cultivation in this Province—we mean the Flemish Beauty was surely never better grown. It was also gratifying to see that the Beurre Rose, one of the finest in quality we have, was displayed by several exhibitors, and the samples exceedingly well developed. Beurre d'Anjou also attains a good size and promises to be a valuable late pear. A variety of pear was one of the sorts exhibited by the Fruit Growers' Association members, and, judging from the appearance of the samples exhibited, will be likely to be very satisfactory to the lovers of this fruit. There were some very fine plants of the Beurre Clairgeau, a very showy variety which may yet prove to be valuable as a market sort. There has been a steady increase in the quantity and quality of the pears shown at our Provincial Exhibitions for several years past, and the number of good sorts that can be successfully grown here is steadily enlarged.

Curculio evidently does not get all the good himself, nor has the black knot killed all the trees. There was a very notable display of pears, and some of the varieties were exceedingly well grown. Some of the best pears were shown, such as Imperial, and the second variety of Orleans, with which we are

not acquainted, but which has some very good points. In cooking plums the yellow egg received the highest award, and next to it the Duane's Purple.

Peaches and Nectarines were also well represented. These fruits can never take a very prominent place in our Provincial Exhibitions. The climate of only a limited section admits of their successful cultivation, but in those parts they are of fine quality and very fair sized. The yellow-fleshed varieties were of very handsome appearance and seemed to be the most generally grown.

The staple fruit of this climate was fully represented. The quantity, variety and quality of the apples could not be easily surpassed. In fact, the climate and soil of Ontario is particularly well adapted to the production of many of the very choicest varieties of apple, and our Canadian brands are much sought for in the fruit markets of England and Scotland. Many years ago the *Canada Farmer* asserted that the apples of Ontario were of higher flavour and better quality than the apples of the Western States, and although that position was stoutly controverted at the time by Western men, yet the course of the market shows, by the preference manifested for our Canadian apples, that the public taste has coincided with that opinion.

Among the varieties exhibited we notice samples of the Ribston Pippin that would astonish the eyes of our friends at home, who have seen it only as grown in England. This variety seems to take very kindly to our Canadian soil, and combines in a high degree excellence of flavour with beauty of appearance. We know of no variety of apple that would better repay the Canadian cultivator who would take the proper course for placing it in fine condition in the markets of Great Britain.

The snow apples were also well grown, and fully maintain the reputation of this very popular variety. The samples shown were very fair, and free from those blemishes which in some localities sadly mar the usual beauty of this fruit. Those who can grow this fruit in perfection would find a few thousand barrels very saleable in New York, Philadelphia or Chicago.

Another apple seen on the tables, a fruit of the highest excellence, the very best winter dessert apple grown, was the Swayzie Pomme Grise. This variety is believed to have originated in this Province, and it is one of which any Canadian may be proud. As an evidence of the estimation in which this apple is held by our ablest pomologists, it is enough to say that the Fruit Growers' Association have advertised for sufficient trees to distribute one to each of the members in the spring of 1875. It is not probable that this variety will ever be as profitable a market sort as some other kinds, but for amateur cultivation, for home use by those who can enjoy the most delicate aromatic flavour neatly put up in small packages, it will ever stand in the front rank.

The display of grapes grown in the open air is continually becoming a more marked feature of the Exhibition, and each year this delicious fruit is laid on the tables in ever increasing variety and profusion. It is not long, some dozen years or so, since the Isabella, Catawba, and Clinton were all the varieties of grape in cultivation, and these were shown if at all, in only a half ripe condition. Now we have a great number of varieties, many of which are well adapted to the climate of a large part of the province, and ripen in good season. Among the grapes of more recent introduction some very fine bunches of the Eumelau were shown. This grape, it will be remembered,

was gratuitously distributed by the Fruit Growers' Association to its members for trial. The bunches shown were of good size and very compact, the berries full medium size, jet black, and of a good flavour. It is very probable that, when we get the report of the Fruit Growers' Association for this year, we shall be able to form a very good idea of its probable value for general culture in Ontario. The sample which received the 1st prize was grown in Goderich.

The Rogers varieties seem to be popular, judging from the number of plates on the tables. The large size of the berries of these hybrids, the hardihood of the vines, and the good quality, flavour and early maturity of most of the varieties are qualities which commend them to them to the attention of our fruit raisers. The chief drawback with many of them seems to be the irregularity in the size of the bunch, ranging from a very presentable sample to a mere cluster of three or four berries.

In the class of best three bunches of any one variety, Rogers' No. 15 carried off both first and second prizes, which shows that this variety stands very high in the estimation of sound judges. In flavour it is very pleasing; the bunches are often very good; but we have known some good cultivators who complained that the fruit was apt to mildew. Although very fine samples of grapes were shown from widely separated parts of the Province, coming from as far to the northward as Goderich and Owen Sound, yet it was quite noticeable that the greater number of first prizes were taken by grapes grown in the more favoured climate of Hamilton and St. Catharines. The best Concord and Isabella came from Hamilton, the best Delawares from near Niagara, and the best twelve varieties from St. Catharines.

Passing from the fruit collections to the flowers, we are compelled to say that there is a great falling off in the display. It is true that the last days of September are not the most favourable for fine floral collections. Some beautiful asters, dahlias, and gladioli with one or two not very extensive collections of annuals constitute, with the greenhouse plants already noticed, the most attractive features. Among the dahlias we notice some very choice varieties. Queen Mab is a most lovely flower, and her sister, Fanny Smart, well worthy to keep her company. Kleiner Meritz and Exquisite are exquisite gems among the Pompones. Fanny Lurchar is one of the best yellows, Miss Henshaw a lovely white, and High Sheriff almost black. Any one in search of choice dahlias might study these collections, shown by two of our leading nurserymen, with great advantage.

The spikes of gladioli, in the only collection we saw, were very fine, but being placed so far out of reach that we could not read the labels, we are unable to mention the kinds more particularly.

## VEGETABLES.

The exhibition of vegetables was better in quality than in quantity. Tomatoes were well represented. It is an evidence of the good taste of our people that the huge, rough, twisted varieties have been superseded by the smooth, solid-fleshed sorts, which, though not so large individually, are every way more desirable. There was a very large collection of peppers of almost every conceivable shape, and all shades of red and yellow. If the quality of peppers cultivated by our people bears such a proportion to the other vegetables of the garden that the display of them at this Exhibi-

tions would indicate, we might surely manufacture all the hay we require and have a considerable quantity for exportation.

Onions, Cabbages, Carrots and Potatoes were shown in considerable quantity, and some of the samples were very fine. We have learned that monotony is not the chief requisite in a table vegetable, and are glad to record that the judges took into consideration in their judgment the use for which these articles are designed. Cauliflowers were few—the heat and want of moisture during the past season has been very inimical to the growth of this delicious vegetable.

The Hubbard Squash yet maintains its high rank as a late autumn and winter vegetable, and the samples shown were of great purity and excellence.

The Potato is receiving some attention from Mr. P. C. Dempsey, of Albany, who exhibited some hundred seedling sorts which he is raising with much care, and from which some valuable kinds will no doubt be selected. On cutting some of them we noticed a fineness of grain and purity of colour, with solidity of flesh, which indicate probable value for table use. As seedling potatoes may become a feature in this department, it is of great importance that the judges should have an opportunity of seeing them cooked, as well as raw, if they are to pass a satisfactory judgment upon their table qualities.

We doubt whether the Horticultural Department of the exhibition has hitherto received that attention and encouragement which it requires and deserves; yet there are some evidences of progress, and such men as Dempsey, Arnold, Mills and Saunders, who are bringing the skill of the hybridist into the service of horticulture, are deserving of every assistance and encouragement. These labours, on their part, are labours of love, and the Government that fosters associations formed of such men, and aids in obtaining and diffusing information through them, will be doing, what governments are not always supposed to do, promoting the interests and welfare of the country.

#### AGRICULTURAL IMPLEMENTS.

This department is one of which little can as yet be said with certainty. From early morning till six o'clock articles continued to arrive, and were placed in their proper sections in the western extremity of the grounds. There are, however, a goodly number of threshing machines, grain drills, mowing and reaping machines, ploughs, &c., already here; but it is said that not more than one-half of those in the way have as yet arrived. Among the prominent exhibitors are a large number of those whose names have already become familiar as successful competitors at previous exhibitions. Among the prominent exhibitors in this class, whose articles are already on the grounds, are John Watson, of Ayr; Haggart & Brown, of Brampton; L. D. Sawyer & Co., of Hamilton; Lawrence & Son, Palermo; Bell & Son, St. George; and John Foreyth, Dundas.

Very large accessions have been made in almost every section of this department since yesterday. The appearance to day would seem to warrant the remark that for variety and extent the show of implements exceeds that of former years. There is also a number of marked improvements in the design of machines long in use, such as Threshing machines, Grain drills, and Straw cutting machines, while less important changes are noticed in the implements generally, though the competition has certainly grown keener as to the perfection of finish, and also as to the application of new improvements, tending to simplification.

In the Palace James Robertson, of the Dominion Saw Works, Toronto, exhibits a splendid and complete assortment of mill and gang saws. The selection embraces about forty different varieties. The largest circular saw on exhibition is six feet in diameter. Their most valuable tooth circular saw, five and a half feet in diameter, is one of their best samples. Among the cross-cut saws, one entitled the "Improved Ontario," with design registered, is claimed to be a great improvement in this class of goods, from the peculiar construction of the teeth. Besides this collection, there is none other in competition in this section.

James McKelvey, St. Catharines, exhibits a portable cream gatherer. It contains shelving for twenty four pans, equivalent to milk or six cows. There are two ice chambers on the top, with tubes carrying off surplus water. A thermometer is placed on the inside to regulate heat. The same gentleman shows a refrigerator with enamelled bottom.

Robert Walker, of Yorkville, exhibits a hand working machine for drilling metals.

On the grounds O. T. Springer, Wellington Square, exhibits a self-regulating wind mill in operation, intended for either threshing, pumping or other work to which horse and engine power are applicable. It occupies the highest point on the grounds, and is itself about forty feet in height. It is claimed that it can be constructed at a cost of about \$300.

Benjamin Mitchell, Hamilton, exhibits a steam or horse-power cordwood sawing machine. It cuts both ways, and the exhibitor claims that it is capable of cutting 18 cords per hour.

L. D. Sawyer & Co., Hamilton, exhibit a draining plough or ditching machine for drains.

McPherson, Glasgow & Co., Fernal also exhibit one of these same machines, but as yet neither of them have been put in operation, and consequently visitors have no opportunity of judging of their real merits. The prize cards are also upon them, and there is no probability of a test now.

The number of double share trench-ploughs on the ground is but small. Those shown have iron beam, but wooden handles. John Watson, of Ayr; B. Bell & Son of St. George; and Turnbull & Co., Hamilton, are the exhibitors.

There are some seventeen single-furrow iron ploughs of various patterns exhibited. Some of these possess an almost extravagant amount of ornamentation. Their real merits as implements can with no degree of satisfaction be ascertained, as none of them receive actual test. Upon what principle the judges are enabled to determine which is best it is difficult to know. The exhibitors in this section are chiefly residents of the western part of Ontario.

The number of iron beam ploughs with steel mould boards and wooden handles shown is somewhat in excess of the preceding section, and, generally speaking, from the same establishments.

The number of wooden ploughs shown appears to keep pace with former years in quality of finish, but is much decreased.

There are only three or four gang ploughs shown, all differing in pattern. Each of these contain three ploughs in the gang.

John Robinson, of Berwick, and Bell & Son, of St. George, are the only exhibitors of double mould ploughs.

John Grey & Co., Glasgow, Scotland, is the only exhibitor in the section of two fur-

row ploughs. The judges however considered it of sufficient merit to entitle it to a first prize.

There are only four two horse iron cultivators. Each of these are of different design from the others. The chief points of difference among them consists in the method of raising the teeth from the ground during the operation of the implement, while the adjustment of the teeth and their relative positions vary considerably. The exhibitors in this section are James Linton, of Clark township; John Mounce, of Darlington; Isaac Westcott, Bowmanville; and Thomas Clarke, of Hampton.

Of two horse wooden cultivators there are some half-dozen on the ground. The points of difference in these are even more marked than in the case of the iron ones. The teeth of these are considerably varied in construction. Shain, Elliott, & Co., of Guelph, Turnbull & Co., of Hamilton, W. R. Grey, of Dundas, W. Bell & Son, of St. George, and John Borer of Dundas, are the exhibitors in this section.

Some ten single horse cultivators, half of them wood and the remainder iron, are exhibited. No two of these appear to be alike in design or finish, nor indeed in scarcely any particular, though there are features in several of them which commend themselves. These are chiefly turned out from establishments in Hamilton, Gt. Ayr, Flamboro, and Bowmanville.

Wm. Rennie, Toronto, exhibits an iron harrow of fifty teeth.

Workland & Roberts, of Seneca, exhibit a rather novel style of iron harrow, link-formed, and adapted to clod breaking and weed gathering as well as levelling. These same gentlemen exhibit a sixty-toothed iron harrow.

John Dridge, of Ottawa, Kirkland and Robb, of Indiana, and Isaac Westcott, of Bowmanville are also exhibitors in this section. Their articles differ but little in design, and are adapted for working with a draught from either side.

But very few wooden harrows are shown, and these are by W. J. Jardine, of Gt. Jas. Reid, of Brantford and A. Copp of Hamilton.

Wm. Powell, of Hamilton, is the exhibitor of a new double harrow and cultivator combined, the principal advantages of which appear to be simplicity of construction and lightness of draught. It is constructed in four parts, and, as a harrow, contains fifty-eight teeth. By taking off the two wings and turning it over, it becomes a cultivator, with twenty-eight teeth; while the two wings of the harrow, combined, make a single-horse harrow.

J. & S. Voss's, of Joliette, exhibit a combined sower, harrow and roller, which appears to be one of the most complete implements on the grounds. It possesses all the advantages of a grain drill in addition to that of a roller, and is so constructed that the roller can at any time be worked without the use of the other portion.

Only three wooden rollers are shown. Two of these are double and the other are treble rollers.

D. Connors, of Hamilton, is the exhibitor of the only stump extractor on the grounds. It stands on three legs, and works with a two-and-a-quarter inch screw worked by a lever.

The name of Mr. J. Abell, Woodbridge, manufacturer of agricultural implements, is not seen in the list of exhibitors; the absence is owing to pressure of business.

About one dozen grain drills of various kinds are exhibited.

John Watson, of Ayr, is the exhibitor of two varieties of drills. One of these is a combined seed drill, adapted not only to seeds and grains of all kinds, but containing also an apartment for sewing plaster lime or other preparations of that description. The means of exit of the two is quite different until they reach the spouts, when grain and the plaster reach the ground together. An attachment exists at the back of the former for sowing of seed. The gear is so arranged that all three may be sown simultaneously. Its peculiar merits obtained for this machine the first prize. The other drill is known as a single drill. Its peculiarity is that the change of gear for grain and seed is effected with one operation, and the range of the spouts can be made suitable to different soils by occupying a straight or zigzag position.

L. & D. Sawyer & Co., Hamilton show three drills. One of these is a double-feed drill with ten spouts. It has a seed sower attached in front, which may be worked simultaneously with the grain sower or not and ensures the burying of the seed. Upon this drill is a distance gauge by which the exact amount of space sown is accurately noted. One of its particular advantages is the possession of a double distributor, finer grains being moved out by aid of small gear. The other two differ chiefly from the foregoing in having but nine spouts instead of ten.

David Maxwell, of Paris, is also an exhibitor of a drill of the variety known as single distributor.

J. Lawrence & Son, Palermo, J. P. Billington, Dundas, who exhibit two and John Westlick of Hope, complete the list of exhibitors in this section.

Wm. Walker, of Westminster, exhibits a seed drill for sowing two or more drills of turnips, mangolds, or other seeds, at the same time. It is intended for work with one horse, with traces only, or shaft and traces. The seed-boxes, drill rollers and spouts are adjusted by automatic motion. A graduated scale also indicates the width of drills to even the fractional part of an inch.

John Watson, of Ayr, exhibits two kinds of drills of this class, one of which is of Scotch invention. It is very compact, and is chiefly formed of castings. Its peculiar merits and cheapness of construction commend themselves at once, and it has taken precedence over all others of this section in the estimation of the judges. The seed feeder is driven by friction of wheels. The other one shown is constructed on the same principle, with this difference, that the seed distributors are worked by belting instead of friction.

Bell & Son, St. George, are also exhibitors in this section. One peculiarity of their machine is the arrangement for throwing the seed distributor out of gear while the drill is in motion—an advantage in turning at the end of the drill.

Thain, of Guelph, shows another drill of the same design, with some little differences in adjustment.

Of single drills for hand use, there are three or four exhibited of varying merits.

Something new in the way of implements is a draining plough, or ditching machine, exhibited by Carter & Stewart, of Aylmer. It is adapted for open ditching, road grading, and subsoiling. The machine, or implement, is simple in construction, and substantially put together. It consists of a plough and horizontal revolving platform, by which the earth is carried six feet from the side of the plough. By reversing the direction of

draught, this machine will make a ditch twelve feet in width. It will, however, if required, make a ditch three feet wide. This is but one of several sizes that is worked by a double team. Larger sizes for three or more horses are made, and are adapted for various purposes.

The display in the sections of mowing and reaping machines is really one of the largest and best yet seen. Of single mowers, there are some twelve on the grounds, and prominent among the exhibitors are nearly all the leading manufacturers and prize-takers of former years.

L. D. Sawyer & Co., of Hamilton, have two of their mowers on the grounds of similar construction, differing only in general finish. They are exceedingly compact in construction, being entirely cast metal, with the exception of the tongue.

Haggart & Bros, of Brampton, show a mower of much the same make as the foregoing.

John Forsyth, of Dundas, shows a single mower with a body guard. "The light Hubbard" is the one exhibited.

Brown & Patterson, of Whitby, are the exhibitors of a highly finished single mower, which on account of extra fine finish has been thrown out of competition. It was this make of mower which obtained the first prize at the competition held at Paris last year under the auspices of the Agricultural Association. It contains a peculiar advantage in the construction of the guard to each tooth, which is moveable for double edge grinding.

A sample of a new machine of an American make, entitled "the Kirby," attracts much attention from the possession of an advantage in the change of position of the knives from a horizontal one to any incline without cessation of work.

Bell & Son, of St. George exhibit an Ohio Buckeye Mower, with the body of wood, and an admirable arrangement for changing the position of the knives.

John Watson, of Ayr, exhibits an exceedingly compact mower of iron with gearing simple. The whole frame is cast in one piece. Motion is got up with four sets of wheels. The frame is the "Buckeye" simple.

D. Maxwell, Paris, shows a mower on the "Sprague" principle.

C. H. Grey & Co. Beaverton, exhibit a "Sprague" mower, which has received the judges' first award.

Thompson & Williams also exhibit in this class.

Of single reapers there are five on the ground. L. D. Sawyer & Co., of Hamilton, show one of the Johnson single reapers similar to those exhibited by them at previous fairs. There is, however, an improvement added this year, in having an attachment called a foot-trip, by which any particular rake may be brought down to remove the sheaf at any time. A shield is also added with a view to gather lodged grain.

Brown & Patterson, of Whitby, show one of their highly finished single reapers, which is excluded on account of extra finish. The machine exhibited is of the same make as that which took the first prize at the test of machinings at Paris last year, though certain improvements have been effected since that time.

Thomas & Williams, of Mitchell, exhibit one of the Johnson reapers. One of the advantages claimed for the machine is the arrangement by which the rakes pick up lying grain, otherwise too low to be cut;

otherwise it does not vary from that exhibited by Brown & Patterson.

A Harris, Son & Co., of Brantford, compete in this class. The one shown is a "Burdick" reaper. It has two driving wheels, its gearing is protected from dirt, and, though light, as a machine, is strongly constructed.

Thain, Elliott & Co., of Guelph, show one of the Johnson reapers.

There are no less than seventeen combined reapers and mowers. John Forsyth, of Dundas, exhibits two, with only a slight difference in the application of the power; one is "Ball's Ohio" and the other "Forsyth's Harvester," with these the Johnson rake is used. On one of these he took first prize as a combined machine at the test in Paris, and also takes it on this occasion.

L. D. Sawyer & Co. show three machines of very pretty workmanship, with some minor improvements on those of last year.

John Watson, of Ayr, shows one of his "Hair Clipper" combined machines, of excellent workmanship. One feature which appears to be peculiar to this machine is the facility with which the driver can, while the machine is in motion, tilt his table.

A. Harris, Son & Co., Brantford, show a Kirby combined.

B. Bell & Son, of St. George, have an Ohio Buckeye machine with some improvements, among which are larger wheels, differently attached draught, and double elliptic spring seat.

John H. Grant also shows two machines, which are not competitors.

John Scott, Caledonia, shows one machine.

Nixon Bros., of Ingersoll have an elaborately finished machine on the grounds, but it is not in competition, as they understood an arrangement had been arrived at not to give prizes on the machines without a test.

Joseph Bros., of Milton, show a Buckeye with Dodge rake and changeable seat.

J. Lawrence & Sons, of Palermo, show two machines, one a "Ball's Ohio," and the other a Buckeye. They both mow and reap the same width.

Haggart Bros., Brampton, show an improved "Ball's Ohio," with an improved Dodge rake. The arrangement for tilting the table is somewhat peculiar, and is claimed to be an advantage.

Of sulkey horse rakes the competition is limited to seven or eight articles. Less difference is apparent as regards the construction than in almost any other section of implements. Prominent exhibitors in other sections are also to be found in this.

Horse rakes without wheels do not appear.

Only two pea harvesters are exhibited. These are shown by McLeod & Mills, of Rogerville. They are adapted for attachment to a reaper or mower machine.

Only three horse pitchforks are shown, one by Andrew White, the others by Peter Grant and Jessie C. Cramer.

A manure fork with frame to work on, for loading manure by horse-power, is shown by W. Fraser, Glenwilliams.

David Biteman, of Seabrook, shows a grass seed sowing machine for hand use, adapted for clover or timothy, and can be gauged to sow any quantity per acre. It is carried by a strap over the sower's shoulders.

Straw cutters are exhibited in great abundance and variety, and the competition is consequently keen.

There are eight root cutters shown. These include four varieties, among which are the celebrated English root cutters.

There are six grain crackers, of two varieties. Some little difference exists in these, but in unimportant points.

In cider mills and presses [combined there is scarcely any competition.]

There are seven different varieties of horse powers, for general purposes or farm use, several of which possess some minor improvements, chiefly in the arrangement and simplification of gear.

Five two-horse team waggons are shown. Besides the perfection of finish which is noticed in one or two instances, there are some very useful improvements effected in the whippetress, brakes, boxes, coupling, &c. This section this year is fully up to that of last.

There are several sections in which prizes are offered but without any competition. In some cases, as in that of light market waggons, there is only one shown.

Noxon Bros., Ingersoll, show two drag-saw machines, one intended for two-horse power and the other for four-horse power.

McPherson, Glasgow & Co., of Fingal, show a Climax threshing machine and a vibrating machine; and Glasgow, McPherson & Co., of Clinton, show a Climax threshing machine. Both of these firms take prizes on all the machines shown by them.

L. D. Sawyer & Co., Hamilton, show a vibrating machine, which is exceedingly well finished, and possesses the latest improvements.

John Scott, of Caledonia, is the exhibitor of a vibrating machine.

Haggart Bros., Brampton, show one of their well known threshing machines.

L. Butterfield, of Brantford, exhibits a champion separator.

L. D. Sawyer & Co., Hamilton, show a very fine clover thresher of first-class workmanship. They have no competition in this class.

Wm. Gibb, of East Flamboro', shows the only drain tile-making machine. It has been in operation on the grounds. He likewise shows a collection of drain tiles.

Bulmer & Sheppard, of Montreal, have a brick-making machine in full operation on the ground. It is worked by two-horse power, and is the only article of this section shown. It makes 1,000 stock bricks or 2,000 slop bricks per hour.

As usual, there is a number of patent gates and farm fences on exhibition, of varying merits and of new designs.

Churns are not as numerous as usual, but are chiefly of new design. There is, however, quite a variety in the methods of applying motive power in their use.

### NATURAL HISTORY.

This is a department of the exhibition which deserves the greatest attention, and as the field afforded by Canada is very extensive, and has not yet been sufficiently explored, we hope to find the researches of naturalists more largely exemplified in future exhibitions. We happen to know that few men are better qualified for giving an impetus to studies of this kind than the Governor-General, and if, as President of a Natural History Society for the Dominion, he were to give his influence and experience, the hopes of his friends in England who are interested in knowing all about Canadian minerals, fossils, plants and flowers, would not be disappointed.

The exhibition of Natural History objects was by no means large, when we take into consideration the abundant resources there are for the

student, yet the specimens presented were deserving of the highest praise. It was not easy to get a good view of anything, owing to the crush of visitors in the gallery, who were more bent upon seeing as much as possible than examining anything critically, and so we must notice the objects in the order in which we were able to get a glimpse of them. First of all there was a case of native birds' eggs, exhibited by Miss E. Gourlay, of Hamilton, and arranged so that the size and colour of each was brought into contrast. The same lady showed a well arranged case of native insects, but they were not so good as a large collection shown by Richard Kyle, of Dundas, who took second prize in this class.

Joseph Arnett, of Hamilton, had a good collection of native birds and animals, stuffed, to each of which was attached its common and technical name, and so classified as to show those injurious to agriculture and horticulture. The collection comprised a great variety of wood-peckers, hawks, blackbirds, jays, and a very fine fox, in the act of carrying off a duck on his shoulder, having the fowl securely by the neck in his mouth.

However, Quinne & Gibbons had a much larger collection, which included about one hundred and fifty specimens of birds, and about a dozen animals. Of these there were a great number of water fowl, and the herons were very fine—a great blue heron looking very well, but without having a very hungry appearance. In the centre of the stand was a stag's head, above which was a large snowy owl in the act of killing a rat, and on either side was an American horned owl and a snowy owl. There were specimens of pintail ducks, dabchicks, hawks, bitterns, divers, &c., and a fine gar-pike; and in a separate case was a collection of squirrels and weasels well arranged. It is needless to say that all these attracted great attention, for there was no part of the exhibition but was crowded.

On the same table as the specimens already mentioned was exhibited a splendid block of amethyst, contributed by John Carvil, of Hamilton; and close by were blocks of imported rock salt, exhibited by Wm. Hendrie & Co., Hamilton. The rock was very pure salt, and looked better than most of the Cheshire salt, but not quite so white as some we have seen from Duncrue, in Ireland.

Next we came upon a most interesting collection of ferns and mosses, exhibited by Robert Mearns, of Toronto, and arranged within the leaves of a portfolio in such order as to form a very pleasing contrast in shape, size, and colour. They included ferns from all countries; while the collection which Miss Jane Choate exhibited of native plants arranged in their natural families, and must have cost no end of labour in collecting and arranging.

There was a large collection of native insects exhibited by Mr. E. Saunders, of London, Ontario, which included every variety from the smallest beetle and butterfly to the largest moth, and the number was something astonishing.

On a pillar in the gallery where this exhibition is held, is suspended an historical chart, or North American historical tree, giving the full history of the Dominion of Canada, which must have cost J. P. Merritt, of St. Catharines, the exhibitor, a great deal of study and labour. He also showed a map which he calls the universal chronographer, that is a great curiosity, but not very intelligible to an ordinary spectator. The principle of it, however, seems to be that from the centre, representing the beginning of man's existence on the earth, there radiates all the important events in history, and lines and

circles separate them into classes, showing how each occurrence is consequent upon something in the history of a nation or a people that has taken place previously. The work is ingenious, and the study and labour must have been immense that produced it. Mr. Merritt also exhibits a decimal enumeration table, which, like his other productions shows the ingenuity of his mind in matters of this kind.

Altogether, this department of the exhibition is well worthy of careful inspection, but that was impossible in the crush of spectators.

### MACHINERY.

This department, one of much importance, will this year greatly excel the exhibition of last year. The value of the machinery already here will be quite equal to that of any preceding show. The disposition of the articles is such as will convey to the visitor, at first, the idea of bad classification. This, however, is unavoidable. The palace itself would, in the department allotted thereto, be wholly inadequate for displaying the large and massive machinery; and some exhibitors, rather than incur injury to their articles by exposure out of doors, have erected buildings for their own especial use; and owing to the fact that no regular sheds other than the palace have been placed at exhibitors' disposal, articles in the same class have necessarily been separated.

North-west of the palace is a frame building 30 x 24 feet, entirely filled by machine tools and wood-working machinery manufactured by McKechnie and Bertram, of Dundas. The collection comprises 18 heavy machines, having an aggregate weight of about thirty tons. As the workmen are still engaged in putting them into position and the tickets are not as yet upon them, a description thereof is deferred.

In the palace the greater portion of the machinery, especially the heavier kinds, is situated on the ground floor in the north-eastern section of the building. Sewing machines and light machinery for domestic use occupy the southern gallery up-stairs. Entering the building at the eastern doorway and turning to the right the visitor at once enters the space allotted to this department, which already contains a large number of articles, some of ponderous weight, from those of heavy milling machinery and railway engine and car castings down through the grade to such as boring and turning machines for wood-work, small castings, saws, tools, &c. Of the articles already in their places here, the following may be enumerated:—

The Great Western Railway Company have a platform on which they exhibit a large assortment of castings for railways, railroad cars and locomotives, of which the major part are finished, while the unfinished as well as finished samples are exhibited of certain articles. The heaviest piece shown by them is a patent outside cylinder for passenger engines, which is cast in parts; and another, an inside cylinder for freight engines. The former of these weighs three tons. The work upon these and other articles is wholly done in the shops of the company, with the exception of the iron castings. Among other articles are a finished crank-axle for inside cylinder of engine, which, though massive, is cast in one piece; a finished connecting rod; duplex safety valve, with Robinson's patent regulating safety-valve attached; reversing lever with Robinson's graduator attached; bottle jacks; locomotive slack-boxes or check valves; Briscoe's patent bell-ringer, worked by eccentric motion of engine; heavy finished driving axles; case of finished brass castings, in-

cluding a complete set of locomotive engine mountings; brass steam whistle; screw jacks and piston rings; and the latest patent reversible car-seat, finished.

John Lamb & Son, of Ottawa, exhibit a lath machine with patented arm. They also exhibit a band-saw machine.

Goldie, McCulloch & Co., of Galt, show a collection of six wood-working machines, one Shive's steam engine governor, and a "Trimmer" smut machine and separator combined. Of these several, the revolving-bed wood planer, for smoothing boards, commends itself chiefly for being more powerful in the feed than can be obtained from a system of geared rollers. The window-blind slat tenoning machine is a unique piece of machinery, and, though small, allows of any length of material being used. Their self-acting shingle machine is, as the name indicates, a self-adjuster and adapted to cut any thickness of shingle required. The remainder of their list includes a double-cope tenoning machine; a shaping machine and a hand mitre machine.

Wm Kennedy & Sons, Owen Sound, show an iron frame circular saw-rigg, with reversible action by friction; and a Leffel double Turbine water-wheel for mill purposes.

Barber & Harris, Meaford, show a "Canadian Turbine" water-wheel, invented and patented by exhibitors. The one shown is a twenty-inch Turbine, though they are made of sizes ranging from sixteen to sixty inches.

F. C. Kirkham, Ancaster, exhibits an improved "Traverse Grinder," for grinding cotton and woollen cards. It is calculated to grind any width of card from 24 to 48 inches, is noiseless in operation and exceedingly simple in construction.

The Bowmanville Machine Company have a wood-planing machine with the revolving cylinder rollers exhibited, as well as a Leffel double-Turbine water wheel of 20-inch size.

#### MACHINERY.

This department, though not receiving much accession of heavy machinery to-day, has added a quantity of the lighter kinds. Within the Palace, particularly, this is applicable. Several articles entered in various sections of this class have not as yet arrived, and will not, in all probability, do so now, as time is too short to enable the same to compete.

Inside the palace W. C. Nunn, Belleville, is the exhibitor of a new chemical hand fire engine, mounted. It is intended to be worked by four men, and may be either used with water or the acid preparation. The particular advantage claimed for it is that it is so very portable, and is ready for immediate use, the acid used possessing peculiar extinguishing properties. It will throw to the roof of any ordinary building. They also exhibit a portable pump which serves the double purpose of pump and garden engine.

Charles Black & Co., Hamilton, exhibit five emery grinders for use in grinding down metals in almost every capacity among machinists and iron manufacturers. They also show chrome steel in bar.

Kitson & Fielden, Ancaster, show two card setting machines, one of the English pattern and one American. Their apparent complication and the peculiarity of the work done cause much interest to visitors; the operation of inserting wires in leather bands, bending, fastening and cutting all being done with rapidity, exactness and great neatness. The uses of the material when made are varied. They also show a quantity of card clothing.

Gurney, Ware & Co, Hamilton, exhibit a large collection of scales of all sizes, between sixty and seventy in number, comprising counter, platform and double column dormant scales. The finish is first-class, and the variety and design in keeping with improvements in other departments of mechanics.

Wm. McLean, Peterboro', exhibits a new article lately patented, which is entitled a station indicator for railway cars, steamboats, &c. It is box shaped and contains two rollers inside, on which is a canvass containing names of stations, and either side the distance from main stations on the line. These are exhibited through a glass front. By pulling the cord at each station a bell rings, and the change takes place instantly. Any number of stations may be given on the canvass. The one used is adapted to the Toronto Branch of the Great Western Railway.

W. Millichamp, Toronto, exhibits a small assortment of steel skates. The same gentleman has several beautiful show-cases on exhibition.

Yesterday reference was made to the building containing the machinery of McKeehan & Bertram, of Dundas, but the machinery was at that time scarcely in position. The lot comprises a large radial drilling machine for boring in iron, the peculiarity of which is that the drill can be moved in any direction by a swinging arm, so as to operate upon large work without shifting its position. Its weight is over four tons. The next machine is a twelve-foot iron planer, with self-acting cross and down feed, weighing over six tons. Next in the list is a four foot geared drill, with self-acting feed and powerfully geared; while immediately adjacent are two small drills for light work. Next is a five and a-half foot iron planer, of similar construction to the large one. Next is a ten-foot gap-lathe, which swings twenty-four inches over the bed and thirty-six inches in the gap. Next in rotation is a fourteen-foot bed engine lathe, with rod feed and screw cutting complete; also cross feed, and self-acting. It contains all the latest improvements, and is certainly creditable to the skill and ingenuity of the proprietors of the Canada Tools Works.

Opposite the foregoing, but in the same building, they exhibit a collection of wood working machinery. The first one of the collection is a planing and matching machine, which planes both sides of a board at once, also tongues, grooves and beads at the time of planing, thus turning out the work complete at one operation. Adjoining this is one of their ordinary planing and matching machines. They also show three machines for surface planing, of various sizes, planing boards of widths ranging from one inch to twenty-four inches. They also show a three-sided moulding machine and a one-sided moulding machine. A large car mortising machine and a small sash and door mortising machine are next in the list. A variety moulding machine, for planing straight or irregular surfaces, is the last of the collection exhibited. This exhibition of machinery is without doubt the largest ever made by any one firm in Canada, and reflects the highest degree of credit upon the exhibitors, who, regardless of expense, supplied all the material for, and constructed the building containing the assortment, without any aid whatever from the Association. The shipment of so much heavy material, and its reception upon the grounds in proper time for being adjudged, was of itself a great undertaking. The value of the collection is placed at over \$10,000.

Jones & Co., of the Markham Bell Foundry have six steel amalgam bells on exhibition,

in a shed erected for their especial use. These include sizes from forty five pounds to three hundred and fifty pounds. They are intended for farm, school and church purposes.

In the machine shed in the delivery west of the palace, to which reference was made yesterday, everything was got into proper position at an early hour this morning. At the northern portion is a boiler, bedded, for the purpose of operating the engine and machinery in the building. It may be mentioned in connection with this that the fuel used is petroleum-tar, which from test, proves to be cheaper for this purpose than coal. Fire is started by wood until about six pounds of steam are obtained, when the tap on the tube connecting with the tar cistern is turned, and this substance passes into the furnace, and is scattered by an application of steam from a larger pipe surrounding the aperture of the small one. The engine is exhibited by Morrison & Clark, Hamilton, and is a fifteen-horse power stationary engine. Belting connects the motive power with a system of shafting which propels the band saw and lath cutting machine shown by the Hamilton Tool Company, which were noticed yesterday. The only other machine in this building is a portable drilling machine, suitable for machine shops, which is exhibited by the latter.

#### SEWING AND KNITTING MACHINES.

The department devoted to sewing and knitting machines in the gallery is as yet incomplete, as some of the intending exhibitors have not arrived with their articles. The eastern section is now occupied with machines from Wilson, Lockman & Co.'s sewing machine establishment, Hamilton. They show thirteen machines in all. Of these there are four manufacturing machines. Among the remaining nine are three full cabinet-case machines in walnut, with neat carving; four half-cases, and the other two common. Their hand power attachment machine, open case, is deserving of especial notice. The peculiarity consists in the ability to transfer the motive power from hand to foot, or vice versa, without any change or impediment in the motion. In addition to the foregoing, they are the exhibitors of a case containing all the pieces of a sewing machine in both a rough and finished state.

The Gardner Sewing Machine Company of Hamilton, occupy the central platform of the wing. A beautiful canopy of banners are swung overhead, prominent upon one of which is a painting of the factory. They exhibit sixteen half-case machines, one full cabinet case, and a miniature model sewing machine. Three of the machines are for light manufacturing purposes; the others are family machines, some of which vary from the others in possessing an extension leaf to the stand.

A department is assigned to the Osborne Sewing Machine Company, of Guelph, at the western part of the wing. They will have twelve machines on exhibition, only a portion of which has arrived. Reference to them, or to others of the same department, will, therefore, be deferred.

#### SEWING AND KNITTING MACHINES.

This department which was yesterday more or less incomplete, has had several important additions made, and is to day one of the most complete in its arrangement of any in the building. At no previous fair has there been anything like the artistic ornamentation among the various assortments of machines, each exhibitor apparently endeavouring to excel the others in the attractions offered, other than those possessed by the



machines themselves. As stated yesterday, the sewing machines occupy the centre, either side, and southern portion of the southern wing in the gallery of the palace. In addition to the coloured canopy which covers the Gardner collection of machines in the centre—which is itself attractive—they have a miniature sewing machine named the Governor-General, working under glass, the total weight of which, including the stand, is only one pound and a half. The machine, exclusive of the stand, weighs but twelve ounces, but does its work perfectly.

The Appleton Manufacturing Company, of Hamilton, occupy the entire portion of the southern platform. From side to side a canopy of red, white, and blue expands, beneath which a line extends bearing upon it samples of the work turned off from both knitting and sewing machines. The background is equally ornamented with the upper part, and contains number of paintings and a large mirror, with the exhibitor's name placed upon it in transparency. Upon the platform which is carpeted, they exhibit six sewing machines and six knitting machines in operation. The former are all family machines, but are adopted as well for light manufacturing work, such for instance as work in leather for boot and shoe making. They are all half-case machines. One of the novelties of the collection is a machine with the works all open, the motive power being a small steam attachment, in actual operation on the platform, and which is manufactured and sold in connection with the machines at a moderate cost. By this plan, which is shown to be entirely practicable, the domestic work of sewing is reduced to the minimum of work, or in reality to a pastime. The foregoing are situated at the western end of this platform, while the east is occupied with six of their knitting machines in operation, by which a great variety of work is done, from children's stockings up through the grade to men's drawers. Various kinds of children's clothing, as well as scarfs, Afghans, &c., are with rapidity worked off. In the central part two orchestras are played at intervals.

The Guelph Sewing Machine Company during the early part of the day received the remainder of their machines and placed them in position in the part assigned them, as mentioned heretofore. The collection embraces eleven in all—of these there are three kinds of family machines, including an improved machine just brought out, the peculiarity of which consist in its having a self-adjusting tension, with an adjustable treadle adapted to any position. There are eight of the well known "Osborn Machines" among the lot.

W. C. Nunn, Belleville, shows Farland's self-feeding tucker and adjustable hemming attachment, in operation upon an "Osborn" sewing machine. The particular advantage claimed for this invention is that it does away with the marking for tucks, and folds in stead.

The Guelph Sewing Machine Company also exhibit a well devised sewing machine, half case, of new design.

The Canada Sewing Machine Company occupy a position on the south side of the eastern gallery. Their samples include seven machines, all of which are half case except one. The peculiarity of this machine is its simplicity of construction, and quiet movement; while its appearance indicates durability. There is neither gear nor cams about the machine. The whole number of patents on it at present are seven. The shuttle is entirely distinct from those generally in use.

The Florence Sewing Machine Company of Massachusetts exhibit three of their ma-

chines, one of which is a full case, the other two are plain. One of these is back feed and one cross feed.

H. Bailey, Toronto, exhibits four of Lamb's Family Knitting Machines. One is a large manufacturing machine; two are chiefly for domestic uses; while one is adapted for especial grades of ladies' shawls and gentlemen's scarfs.

C. W. Williams & Co. of Montreal, have six machines on exhibition; two of which are manufacturing machines, the others for domestic use. They also exhibit a beautiful case, with pearl inlaid in walnut.

#### METAL WORK.

Resumed from yesterday, we observe in this section a patent "Car Coupler," by D. Bradford. A "Hydraulic Test Pump," (in model), by James Morrison, is noticeable in this day's exhibition. In this section is also a most ingenious piece of mechanism for producing an illuminating material, in the operation of which by a combination of oxygen gas and gasoline the illuminating gas is produced.

Messrs Byers & Matthew, Gananoque, show a sample of wrought-iron axles. Mr. Isaac Mills exhibits samples of "Weatherlief and Door Valve" and ventilator. Webber & Co., Hamilton, and Alexander Smith, London, exhibit a collection of carriage parts, fifth wheels, body loops, and steps. A new railroad spike, exhibited by Henry Rodger, Chippawa, appears to possess advantages which should recommend its general use. A self-acting "car-coupler," by Dr. Wright, Oakville, has been in use, and works with advantage and safety.

Our notice of stoves was, of course, incomplete yesterday. We must refer again to the display of Mr. A. Copp, of Hamilton, which, properly placed, is not surpassed in the exhibition. Mr. Hall, of Hamilton, shows a very fine assortment of tin and japanned ware. E. & C. Gurney have also a section in stoves that calls for remark. Turnbull & Co., with their stoves, exhibit a very fine collection of enamelled-ware, registers, saucepans and (pardon, ladies) spittoons. This section is really attractive.

In Ottawa, the collection on exhibition of Messrs J. M. Williams & Co., Hamilton, is unsurpassed for variety and beauty of finish and design. A few of their contributions are mentioned all paraphrase a hackneyed saying, and we can say "there is nothing like this." G. H. Padler, Oshawa, exhibits a gigantic "portable hot-air furnace," and a variety of "fu" — the last a desideratum of the most importance. Dr. Bradley, Woodstock, also exhibits a "hot air generator," consisting of a spiral stove-pipe with in an ordinary sheet-iron case, an adaptation that seems to be complete.

C. Andrews & Co., Hamilton, show an assortment of "wire-work" flower stands and baskets, very neatly constructed, and commending itself by its ornamental simplicity and utility.

In fire-arms the only exhibitor is Mr. W. G. Rawbone, Toronto. His contribution comprises several rifles of special excellence of his own manufacture, and several of Westley Richards' patents. These, with a selection of revolvers and a beautifully ornamented hunting knife, formed a point of interest to sportsmen visitors.

Messrs. Rutherford & Co., Hamilton, show a large assortment of glass-ware, jars, bottles and vials.

#### MANUFACTURES.

In a survey of the space devoted to a large display of manufactured articles, there was evident at once a difficulty in proceeding with descriptions, as the stir of preparation was rife on every side; compartments only partially filled, and exhibitors busy unpacking, cleaning and arranging. In some instances, however, it was possible to particularize, and in these we give the following observations:

In pottery, the only complete collection is that of Mr. R. Campbell, Hamilton, who occupies a considerable space with a large and varied assortment of this ware, comprising sewage pipes, from the narrowest flue to a conductor 20 inches in diameter. The collection also contains specimens of culinary utensils, with specimens of gut and bronzed *Terra Cotta*, chiefly ornamented, the first manufacture of the kind in Canada.

There are a few articles in marble work already in place, but the assortment is evidently incomplete. The exhibitors are Mr. M. E. Kire, and Mr. T. McComb, Hamilton. The articles present, consisting of head-stones, mantles, and table-tops, are good specimens of work.

The display of furs is not yet large; Mr. H. Ferdinand, of Waterloo, shows a selection of sleigh robes, and Mr. J. Ash, of Hamilton, a collection of furs on a large design worked into a series of tasteful figures.

Messrs. Wright & Co., St. Jacob's, display several pieces of 2-ply carpet of excellent workmanship, and alongside Mr. A. Thompson shows a piece of sericeable-looking rag-carpet.

Mr. James Morrison, Toronto, contributes a collection of brass work, steam gauges, door handles, castors, and plumber's work of beautiful design and finish. He adds a few specimens of nautical compasses of very fine workmanship.

In plated ware, Mr. W. Mitchell has on view some very fine show-cases.

Mr. Robert Wilkes, Toronto has a large selection of nickelite silver ware, forming one of the most brilliant collections in the Palace.

There is, as might be looked for, a large and excellent display of stoves—parlour, hall, and cooking stoves—all of which offer points of excellence and claims upon our regard at this season that would make it difficult to choose which we would select. Among the exhibitors are Mr. Howles, Copp Bros., Hamilton, and Mr. Wm. Turnbull, of the same place. These essential portions of a housekeeper's furnishing display the improvements that have successively been made in this article, until it might seem to one with a mind to be content that nothing further could be done in improvement, unless it was to get a stove that wanted neither wood nor coal for consumption.

In steel work, parts of carriages, the samples furnished by Byers & Penn, Gananoque, consisting of springs, are very fine work, and of all capacities, from those for railway cars down to springs for the lightest sulky. There is also exhibited in another compartment a sample of that portion of carriage gear called the "fifth wheel." This department is, with the exception of the first-named specimens, meagrely filled.

#### CARRIAGES AND SLEIGHT.

In buggies there are not many on the ground, but we notice some of extreme elegance—single and double seated. The principal exhibitors are J. Pringley and J. Amor, both of Hamilton, and W. H. Vermilyea, of Belleville.

The display of double pleasure carriages is probably the finest that has been made at any exhibition in this Province. Among those deserving particular mention are two very stylish, exhibited by Bruno Ledoux, Montreal. The same manufacturer exhibits a single carriage or coupé which is finished inside with a regard for convenience entirely new to western ideas. By a pneumatic tube the "inside" can communicate a verbal message to the driver; a small bell pull is also at service; a mirror is securely bedded in the interior, which is also garnished with pockets for parcels. Mr. Vermilyea is also an exhibitor in this line, showing a very handsome double carriage, which is not surpassed on the ground. A Clarence two-horse carriage, shown by Mr. Prongney was much commented on for its unique appearance and elaborate workmanship. The cost is estimated at \$1,800. As a not unfruitful conclusion to this notice on carriages we observe a hearse exhibited by Mr. Salloder, which it requires some fortitude to say is a quite elegant working vehicle, and if one could banish the associations of mould and coffins—but we will take a look at the sleigh: there were only two cutters on the ground! We observed a neat trifle on one of the shafts called the "whip and rein holder," by G. F. Devine.

#### HARNESS, SADDLES, TRUNKS, LEATHERWORK.

In the section for harness the display was not large, but the samples of work were of a good quality. We noticed a set of team harness from T. M. Gorrick, St. Mary's, combining as much neatness as is compatible with the requisite strength. Messrs. Philp and Robertson, Hamilton, show a set of double carriage harness, silver mounted and very handsome; also, a set of single carriage harness of fine workmanship. In saddles, too, this firm is successful in prize-taking, showing a lady's saddle of excellent finish. Ernest Kraft, Hamilton, exhibits, with some fine saddles, a collection of trunks and valises of excellent workmanship and in variety, in which articles his competition is quite successful. We noticed also a contribution from Lugsdon and Barnett, Toronto in valises, earning the distinction of premiums.

Mr. H. A. King, Hamilton, takes 3rd honours for whips, of which stimulating articles he shows a large selection. Mr. Isaac McMichael, same place, shows a sheaf of whip thongs, also prize articles.

Belt leather is shown by Mr. Wm. Kerr, Mitchell, which is adjudged first-class; and he also exhibits a sample of harness leather equally meritorious. In other varieties of leather Mr. Kerr has no competitor.

Some excellent samples of leather machine belting are shown by J. L. Hardman & Co., Hamilton.

Mr. Donald Clark, Puslinch, shows successfully some pieces of kersey for horse clothing.

In extras Mr. L. Martin takes a prize for a model of a rotatory air tight tanning vat of considerable merit as a time saving machine in this manufacture.

Mr. Ferdinand exhibits some dressed calf-skin; and some finely dressed deer skins are contributed by McMichael, Hamilton, and Clayton Richardson, Haldimand.

#### SHOEMAKERS' WORK, TOOLS, AND LEATHER.

There was noticeably very slender competition in this class, but the contributions from the firm of Damer, King & Brown, Toronto, were so ample and of such excellence and variety as to give the section quite a full appearance. It is not our intention to particularize to any extent, and we will only notice one article of their manufacture—the

lady's skating boot, one of the daintiest, and fittingest little bits of foot gear imaginable. This firm takes three first prizes and a diploma.

In boots the only contributions are a very large assortment of lasts and trees, the exhibitors in which are Messrs. Wallace & Block, Salem, and Messrs. Selway & Iredale, Toronto.

#### WOOLLEN, FLAX, AND COTTON GOODS, FURS, AND WEARING APPAREL.

This class was well represented, the contributions being numerous, and generally of a most commendable and even excellent quality. In woollen manufactures our people claim, not the excellence of finish attained by foreign manufacturers indeed; but in the qualities of endurance, and not slightly in finish, the Canadian manufactures of this production are not excelled, if they are equalled, by any in the world. This is owing, primarily, to the quality of our wool; and, with the qualification already admitted, our machinery and skilled labour are second to none. The home demand for the woollen goods of home manufacture is a sufficient illustration of the growth of this manufacture in Ontario. A few years ago—we may say in an undertone—Canadian tweeds had to be sold as English goods; the reverse is now the rule, and English goods find readier sale as Canadian manufacture. Indeed, the excellence of Canadian woollens (tweeds) is now recognized to such an extent in the United States market that merchants "over the line" only regret the excessive duties that prevent their dealing with our manufacturers. An objection which cannot fail to have due weight with our own people is that, as a rule, "shoddy" is an abomination eschewed by our conscientious manufacturers.

Barber Bros., Toronto Woollen Mills, Streetsville, occupy an entire section in the display of over 40 pieces of spring and summer tweeds, satinets, Oxford greys, and fulled cloths. It is no merely ordinary observation when we say that the display of home manufactures by this firm is a credit to the Dominion. It may be noticed here, too, that they have obtained eight first prizes, or the option of a gold medal, for the excellence of their contributions.

Following these we notice two pieces of very superior waterproof cloth by Mr. B. Williams, Glenora, which for quality and even finish vie with the imported article.

Several pieces of Winceys, by Messrs. Harris & Co., Rockwood, have obtained a first prize.

Some lustres, exhibited by Randall, Fair & Co., Hespeler, are of such quality as have secured an extra prize.

A number of pieces of home-made satinets are on exhibition, of various shades of merit. One piece of scarlet flannel, by Mr. James Grant, of Puslinch, takes 1st prize.

Mr. Donald Clark, Puslinch, gets the second prize for tweeds, home-made.

Donald Clarke, Puslinch, gets a first prize for a piece of white serge of really good quality. Miss M. A. McIntyre and Mrs. Joseph Grant, who takes a second prize, are also exhibitors in this article.

There were a few pairs of comfortable-looking blankets; among the exhibitors Mr. Daniel Kitchen, Canning, takes the first prize.

Mr. D. Clarke gets first prize for a very fine piece of white flannel (home made).

Messrs. C. F. Cliff, Hespeler, contribute to the Exhibition a very nice lot of Cardigan jackets in printed yarn—the only kind made in Canada. They are successful exhibitors.

Armstrong, McCrae & Co., Guelph, show a splendid collection of woollen yarns, stockings, hats, drawers, undershirts, and Cardigan jackets, in all of which they have carried off first prizes. This entire section is occupied with articles of first rate quality.

Some samples of American cotton (raw) are on exhibition in this section by Mr. Fraser, Toronto.

Mr. George Copeland, Hamilton, exhibits a large selection of cordage in flax, Jute and Manila hemp, for which he has been rewarded by several prizes.

In cotton batts, yarns, and twine Mr. W. W. Wait, Merriton, shows largely and successfully. The Dundas Cotton Mills are also represented in these articles, as well as in unbleached calico and cotton bags, in which first prizes are awarded.

Mr. James Clench, Hamilton, displays a number of beautifully coloured and finished sheepskin mats, dusters, and sleigh-ropes, for which he has received, with others, an extra prize. His corner attracts a large degree of attention.

#### CHEMICAL PREPARATIONS.

This department was represented by only a few contributors, but the collections possessed special merit. There were several cases of perfumery, put up in such style, and with such tempting devices, as might have tempted the least fanciful to "smell out." With these, however, was shown by Mr. T. Copeland, Hamilton, an article he calls "Sweet Castor Oil," a specialty, which must be a boon indeed to nurses and sickly juveniles. In close vicinity we find Mr. Hugh Miller's collection, comprising his widely-known "Yorkshire Cattle Feeder," and his "Tick Destroyer" compounds, which may be fairly rated as among essentials to farmers. Messrs. Lyman Bros., Toronto, also appear as contributors in this class.

#### CANNED FRUITS: PICKLES.

In this department the "Grimsby Company" go far beyond all competition. Their portion of the space allotted to these preparations forms an interesting feature of the exhibition, flanked at either end by an Orange tree and a lemon tree, both bearing fruit, but very green. The collection comprises canned samples of all Canadian fruits and plants whose properties and flavour make such a process desirable. There are also, by other exhibitors, a fine selection of appetizing pickles contributed by various exhibitors.

#### MUSICAL INSTRUMENTS.

The display in this department and the unequivocal interest bestowed upon it by the spectators is a guarantee that, if the musical taste is not developed in perfection or rises to a passion among Canadians, it is at least most widely spread, and unquestionably one that is being improved by careful education. In the collection were many instruments of an excellence of tone and finish that it would seem impossible to surpass. We devote some space to a more particular notice.

Messrs. Bell & Co., of Guelph, exhibit a small church organ, 12 stops, 4½ sets of reeds, and 3 sets of qualifying tubes. The instrument has carried off a first prize. Messrs. Bell & Co. have also taken a first prize on a double round melodeon with three sets of reeds, qualifying tubes, and a beautifully carved case. In addition to these they show a large cabinet organ, with seven stops and qualifying tubes; a parlour "grand" organ, in a rosewood case, and with nine stops.

including the campanello, a stop not generally found in cabinet organs; and an organ with pipes and reeds, either of which may be used separately or both combined. In this display Messrs. Bell and Co. sustain the excellent reputation as musical instrument manufacturers which they have now had for several years.

Messrs Herold Bros. of Hamilton, a new firm, exhibit three pianos

Mr. Heintzman, of Toronto, exhibits one of his fine toned square pianos, on which he has taken a first prize. He also shows a beautifully finished cottage piano.

Mr. C. L. Thomas, of Hamilton, exhibits three square pianos which appear to be very good instruments. Two of them have a 7 1/2 octave key-board.

Mr. J. A. Livingston, of Brantford, shows four cabinet organs.

McLeod, Wood & Co., of Guelph, exhibit two piano style melodeons, one in a rosewood and the other in a walnut case. To each of these instruments is attached a bellows of the same description as that used in the cabinet organs; they have thus the same power as cabinet organs, and are much more handsome pieces of furniture. They also show two cabinet organs in cases made in the cottage piano style, and two in a new style of case which they claim renders the instruments capable of a much fuller tone than organs in the ordinary style of case. The last mentioned instrument has eight stops, three sets of reeds, and a key board of five octaves, and the case is beautifully carved and very highly polished.

Messrs Weber & Co., of Kingston, exhibit three of their well known square pianos. These instruments are distinguished by great brilliancy of tone combined with much power. One of them has carried off the first prize for its case, which is most elaborately carved. One of others has been awarded first prize in the section "square pianos."

FINE ARTS.

While a thousand objects, animate and inanimate, were bearing testimony to the progress of this great Dominion in material good, there were others which showed that the cultivation of the Arts and the sister graces of life were not left unattended. Among these the objects brought under the category of "the Fine Arts" were the most suggestive and significant. Somebody has said that literature is of no party, and the same may be held true of the sister art of painting. Nay, it would almost seem as if it was the special province of the products of the imitative faculty to provide a neutral ground, where men after the fierce, if wholesome, struggles of ordinary life might meet and find that there are points on which they could touch in sympathy—where the mind should be lifted above peddling details—above cares that worry and spoil the spirit—into a serene region—where the air is finer and the light not "the light of common day." It would not have been easy to have spent the time it was our duty to devote to the picture gallery of the exhibition without being struck by the invaluable influence of art on the natures of busy men—those whose lives are one swift struggle for success and material good forgot for a moment their ambitions, laid by their cares, and escaped from themselves, and were by so much the better and the happier. We do not want to attach more importance to this gallery than it deserves. Some of the pictures were, however eminently and appropriate, and filled the mind with ideas germane to the problems presented by the present condition of Canada.

Mr. Verner's Indian Chiefs were poems, sad, and proud and "nereal, which recalled the speaker in a striking manner that "his tread was on a nation's dust," and "Scalping a traitor" is an Illiad in a no-shell. To gaze on the pictured semblance of mighty warriors led the mind with ideas commensurate with the vastness of this continent—nay, with the vastness of Nature's operations; and we heard

the voice of streams, that swift or slow  
flowed down from high hills, and saw  
the dust of continents to be

Mr. Paigent, Mr. Braigman, and Mr. Verner stirred deep feelings in rugged breasts yesterday. It was clear from the observations made that the visitors were not lightly critical, but they were, nevertheless, generally just in their observations, the invaluable test being one that Aristotle would endorse—was it like nature? The children's portraits were great favourites, and a man would remind Bill or Tom how well a Billy or a Tommy that was at home would look in oil. One poor lady discovered a resemblance to a lost child, and there was much loving reminiscence; the heart was too full for reticence—landscapes, figures, flowers—all had to yield the palm to the children in the opinion of these good, simple souls. How English all this is! Aye, and how healthy too! We could have wished to see more pains taken to represent the peculiarity of the Canadian atmosphere and to give us in our characteristic scenery, but when ever drawback has been counted and every qualification made, it remains to be said that Canada was artistically very well represented at the exhibition. One or two pictures indeed would have reflected no discredit on painters who work amid our surroundings, and have every element necessary for a cultivation of taste—every element which can inspire emulation and make the artist feel an abiding consciousness of his "high vocation." The first picture amongst the odds which attracted the visitors attention is a portrait of Ne-la-Orah-Ouh (Big Dog), a Chippewa chief, who offered himself in his hand of warriors to the Government to fight the Sioux in their raid in Minnesota in 1862, by F. A. Verner, of Toronto. The chief's head dress consists of hawk's feathers dyed, around his neck are tusks of the grisly bear; while in his left hand he holds the medicine pipe. The chief does not make a handsome picture. In the wrinkled and gnarled face there is the history of a life of activity, in which the fiercer passions have had full play; the shrewd eyes and compressed mouth speaking of authority and that worldly wisdom which comes of having watched men and their ways from a standpoint which enables the mind to make use of all its observing powers. Mr. Verner has treated his subject with great power. The expression is good, and it is easy to see that the old chief is meditating on some difficult question which has arisen within his world or in relation to himself and some hostile chief. There is "speculation" in his eye, and about the mouth resolve waits on the decision of the judgment. The articulation of the veins of the hand evinces the care of treatment. There is, however, a harshness about the picture which implies a defective mastery of colour, and the flesh is inefficiently rendered. A landscape, by Mr. Richard Baigent, Toronto, is a most creditable piece of work, the grouping being artistic in the highest sense of that exigent word, and the management of the chiara-scuro, the treatment of grasses, foliage and water affording promise of the most fruitful kind. The sunlit willow, drooping over the neck of water, is admirably true to nature, while the sunny lapping waves remind us of Millais.

without raising a ghost to terrify the artist. Mr. Baigent fails in dealing with the trees in the distance, and his sky is weak. Robert Whale, of Barford, gives us a winter picture—or what might seem such—for it is impossible to watch a Canadian landscape without thinking that Turner in those "lean" visions, in which he saw that in the landscape which other men could not discern, must have dreamed of this country, where hills and lake, and forest, are seen as though some strange time. We must say that Mr. Whale has given us this magic light. We have, however, a one landscape notwithstanding, showing much wealth and power in dealing with colours. From the same artist there is a mountain torrent breaking and dashing between and over rocks and storm-proof trees—which displays these quantities in an intense form. The rocks and blasted mountain pine and down sweep of the hurrying waters are well handled. Mr. W. Ambrose, of Hamilton, like those we have already mentioned, competes for a prize subject (any subject) with a very fine landscape—a sunset in a mountain district—which is very admirable in its light, the golden haze of sunset sweeping down from the yellow blaze over the glacial bergs into the bright valley, throwing long shadows on the warm fields (the time is harvest), tinged with fire the earth and the upward bank of the tall, bare stems of two tufted pine trees. A farmer is hastening home along the road, and in a field in the foreground presents the pale up the last load of hay on that day. There is to dryness about this picture, the feeling of an artist regarding it, every detail has been carefully studied, and the glowing grasses and a road of hill are depicted, the sense of rapidly approaching night thro' the weary horse led on a weary path, along the road where a mass of red stone burn as in a row on the side by side with deep cool shadows, where it is already night, and nature has added herself to sleep. The competitors under the first section will be completed when we say that Mr. W. Bridgeman, Toronto, contributes two portraits of children, the dappery being admirably cast, and the expression being very good, but the flesh, especially of one of the children, was dry in its treatment. The costume in each case leads us to remark that it would be well if Mr. Braigman devoted more attention to the study of aerial perspective. These two portraits, however, stamp Mr. Bridgeman as a master of his craft, and not a few mothers and fathers during the week, stopping to look at the canvas that lives, on those eyes which look out on you full of innocent, eager wonder, those upturned lips that seem as if they would speak will wish that Mr. Bridgeman could do six for them to the fitting beauty, the winning youth and innocence, of some household darling. In the class where have just dealt with the first prize is \$20; 2nd, \$12; 3rd, \$6. In the other classes the prizes are relatively of smaller value. The prizes have not been adjudged as we write. Class No. 2 ("Animals from Life") has induced one or two artists to give us some conscientious studies from nature. The two musk rats in the foreground of a clearing—forest behind—(by Mr. Baigent) are drawn with as loving a hand as Sir Edward Landseer himself would have bestowed on those knowing gentlemen of the copee. Immediately beneath is a dangerous competitor from the studio of Mr. Robert Whale—a racoon eating Indian corn near a patch of water—while a frog perched on a stone gazes with its goggle eyes full of indignation at the intruder. The racoon is splendidly done. On the left we have some beavers from Mr. Baigent—a picture which

is not equal to either of his other pictures—but which gives him an opportunity of showing with what mastery he can imitate grasses. Mr. Chas. Chapman of London (an amateur) tries for empire with a farming piece—not without merit—the cows being very good, but the trees patchy, and in some instances untrue. We had nearly, owing to defectiveness of arrangement, failed to notice an eagle or some bird of prey with a trout in his claws—a picture untrue to nature in every particular, and dauby. The next classification is that of figure subjects, and here Mr. Verner is easily first (we know not what the opinion of the judges may be.) His Ta-Tanka-Nanin, hereditary chief of the Sioux, and participator in the massacre of 1862 in Minnesota, being very much superior to the picture in class 1 by the same artist. The face of Ta-Tanka-Nanin is not unlike what Mr. Spurgeon's was, only that the mouth of the chief is much better formed than that of the great Baptist preacher. The treatment of the whole figure in posture and expression is very good, while the flesh is rendered in a manner that makes us doubt if both pictures are from the same hand. After this admirable picture we have to deal entirely with Mr. Bridgman. There are three figures—a little girl sitting down at the base of a tree—the boots, as usual, playing a great part; then a little boy sitting on an impossible rock in the midst of an impossible landscape—Mr. Bridgman showing himself ignorant of the very elementary principles of linear perspective; and then a little boy in an arm chair, which at a superficial glance will please, but which the next moment shocks all sense of proportion by the monstrous size of the head. Yet this is the only figure of Mr. Bridgman which is absolutely free from dryness. Then we come to class 5 (Canadian landscapes,) and Mr. A. N. McEvoy, of Toronto, leads off with the Falls of Niagara, and a river scene on one of our great rivers. (Why he and others do not tell the locality we are puzzled to say.) The Niagara picture is a frightful failure, the falling water giving no idea of water whatever. It is only when we look below and see some waves and patches of dirty white, meant for foam, that by an effort of the inferential faculty we conclude that we are gazing not on walls of gardens dimly seen, but on Niagara. The other picture has some felicitous colouring of rock, but the water—where McEvoy evidently thinks he is strong—is execrable. A landscape by Mr. J. C. Whale brings us to somewhat better things; but here in the midst of some good work we have not a little inexcusably bad. A symmetrical fox, springing with great leisure over a pool, with some helpless-looking dogs following, takes away all attention from the landscape, which is hasty and dauby, rocks being piled on each other like so many chesscakes; yet wherever that scene is assuredly great beauty dwells. On the other hand Mr. Verner has a fine landscape—rapids sweeping between pine forests—it being impossible to mistake the rush and roar of the onward stream for anything else. We have to take the good the gods provide us as they please, and so pass on to Class 8 (portraits.) We lead off with Mr. Alexander Davidson, Toronto, who gives us a portrait of a masonic grand-master, (L. B. Harris), who, if at all like his portrait, we should never like to meet unless at some period when our nerves are exceptionally strong, for a more ghostly person it would be impossible to conceive. It reminds one of the early Italian style of painting saints—only that it is incomparably harder. We have a smaller portrait from the same hand having the same dry defects; of another, ditto. We have three very excellent portraits from Mr. Bridgman—that of a man of about

35 and "bearded like a pard," being, we fancy, the first prize. A man's bust by Lester, (Hamilton), and a full length painting of a girl with a doll, show great stiffness and crudeness in dealing with colour. The other portraits, that of a young lady by Robert Whale, and of a young girl by T. M. Martin evince deplorable immaturity. In class 7, (Canadian marine subjects), we have a scanty representation, but what we have is good; Mr. J. M. Martin giving us a river scene so good, notwithstanding some glaring defects, that we should advise him to stick to landscape and eschew portrait painting as long as he lives. The other picture is the "Eagle Rocks" on the coast of Labrador, a fine painting in which the sea, in its sweep and tint, is finely rendered. This is by Mr. Verner. We would point out to him that it is a pity his rocks, so strong in some points, should be so weak in others. His sea deserves only unqualified praise. In Class 6 (landscape or marine painting, not Canadian) we have at the hands of Mr. Baigent a fine landscape in which he deals with foliage, the chiaro scuro of the trees being executed with his usual skill. Under the heading of "Still Life" we see some grapes and peaches and melons from the studio of Mr. J. Griffith, dead birds from Mr. Baigent, and also from Mr. Whale. But nothing under the head of "Still Life" calls for special comment, nor does Class 3 (flowers, grouped or single) And now it would appear, from the observation of one of the beadles—not from the catalogue—that we have henceforth to deal with amateurs in oil colours; and so we commence with Class 10 (any subject). Miss Mary Strickland, Oshawa, Mr. Thomas Corquodale, Toronto, Mrs. C. Gourly, Hamilton, Miss C. Rise, Hamilton, Miss Westmacott, Toronto, Charles Chapman (an amateur), and Dolly Wilson are exhibitors under this head, but there is nothing calling us to linger over its beauty. The landscape of Dolly Wilson, Hamilton, is very elegant, and shows a vicious study of the pre-Raphaelite school. Under class 14 Miss Mary Strickland has a fine Canadian landscape, but she fails to give in an adequate manner the fire of the trees in autumn. We have then photographs and photographs done in oil and in pastels, by Buttes Brothers, Chatham, and these portraits are among—if not—the best in the exhibition; while the portrait of a lady finished in pastels is one of the most beautiful imitations of the human face in its divinest form we have ever seen. Carvings and models having caused us to tarry for some time, we pass on to "water colours." The classifications are the same, but the interest is no longer so great, and we must content ourselves, because we know in no other way could we content the reader, by dealing only with the more salient exhibitions. Mr. A. Verner vies with Mr. Martin and Mr. Millard (all of Toronto), Mr. Smith of Hamilton, and others, in figure subjects, easily winning, with an Indian scalping a Trapper—a picture alike terrible and true in feeling; Mr. C. S. Millard taking the second prize with a very sweet picture of camping life. Among the "flowers" Mr. J. Griffith (London) took the first prize—his picture being a splendid assemblage of colours,—the second prize falling to Mr. Martin (Toronto), for a water-colour of English wild flowers, which reminds one of a charming passage in Shakspere. Mr. Verner's encampment of Chippewas deservedly took the first prize in the 1st class (any subject, \$15), the second being awarded to Mr. J. H. Caddy, for a lovely bit of mountain scenery, the third prize falling to Mr. Griffiths, for fruit and flowers. Mr. J. M. Martin exhibits two cows at a pool (Animals from Life), which might make a reputation for a man. Some good

pencil and crayon drawings will, among other things, well repay a visit. F. M. B. Smith (Hamilton) has painted the Cricket Ground at Hamilton, with the English Eleven playing, and we are only glad that the English Eleven did not see this tribute to their prowess. A beautiful painting of the Muskoka River (Verner) took the first prize among the Canadian landscapes. On the whole the exhibition of fine arts reflects the highest credit on Canadian artists, and is full of promise of a day in the early future when the unique scenery of the Dominion will be transferred to canvass, which will be eagerly sought in the dilettanti marts of the old world.

We did not in our remarks of Tuesday exhaust the interest of the picture gallery. It was well we had chosen the first day for our observations in chief, because the crowd has been since so great that the only problem one could think of was how to move on. As well as we can see over the heads of the people, packed as close as herrings in a barrel, the 1st prize has been righteously awarded to Mr. F. A. Verner in the competition of water-colour Canadian landscape. In sepia drawing J. Griffith takes the first prize with some fruit beautifully executed, and Mr. J. H. Caddy the second, his work being a very charming sketch of a "Temple in the ruins of Palong." Mr. F. A. Verner, who is the favourite son of fortune in this exhibition, snatches the supreme reward in marine views, by a fine water colour—"Toronto from the Bay." We have often seen Toronto from the bay, but never anything like what it appears in this picture. Perhaps we have not been fortunate, or otherwise it seems to us Toronto ought to have made a much better picture.

"A Moor in Cornwall," by Mr. Henry Martin, deservedly wins in the kindred subject of marine view, without the qualification of "Canadian." There is, however, nothing very remarkable until we come to the portraits, and here Mr. F. A. Verner presents us with one of the most artistic pieces of work in the entire gallery. His Italian beggar is true and artistic in every particular. Any man who has ever wandered down the Campagna, or loitered around the church whose dome dwarfs St. Paul's, will raise this portrait out of the particular into the generic—Mr. Verner having, in fact, pictured a class as well as an individual. The hypocritical air, the shrewd eye, the wrinkled face, the exaggerated suffering, and voluntary abasement are all portrayed in this admirable study. The clever beggar shivers so well we instinctively feel in our pockets for some coin. Mr. Mathews (Toronto) takes the second prize with the portrait of a girl, which is deficient, however, in easiness of pose. Mr. R. Baigent has given us a splendid crayon—a water fowl amid reeds—which takes, and most deservedly, the first prize, the second falling to Miss B. Gunn. Her fox with a duck in his mouth is very good, but we would point out to Miss Gunn that there are grave anatomical objections to the lines of her duck; the fox is perfect. Coming to "crayon coloured," we have a beautiful river scene from the pencil of Mr. J. H. Caddy, which takes the second prize. We shall not pause over crayon portraits further than to say that Mr. F. M. Smith's portrait of a young man writing (second prize) has considerable merit. Among the pencil drawings there is a fine sketch of trees around a ruin, (1st prize) which in every detail is well executed—the outline and feeling being alike admirable. The artist is Mr. J. H. Caddy. Touching the pen-and-ink sketches, Mr. J. Griffith takes the first prize with some fruit,

expressed with great correctness, and with a softness which we should have scarcely credited pen and ink with the power to render. A spirited sketch of a lacrosse match (F. M. B. Smith—why does he have so many initials?) takes the second prize. There is some good work here—nor would it be easy to give a better representation of a man in the act of running. Going forward—not in the natural order, but according to the arrangement of the exhibition—it is our duty to deal with wood engraving. Ball Brothers, of Toronto, exhibit some engraving with proof which, in fineness of execution, is not to be surpassed. The proof of "Children at Play" is admirable and the delicate outline of the leaves of trees evinces great fineness. These gentlemen win the first prize, the second falling to P. L. Scriben, of Hamilton, who exhibits some very good engravings of machinery.

Carving in stone is represented by good work from Messrs. Thomas McComb and M. E. Rice. M. E. Rice is *facile princeps* in more senses than one as a statuary. He has in truth had the race all to himself. His sleeping child is excellent in posture, but the face is bad.

Thanks to prizes in models in clay or wax we are delighted by Mrs. A. Healy, Toronto, with a splendid pair of boys fighting, attitude, expression, passion, everything, is well done, and we only wonder it did not take the first prize instead of the second, the first falling to Mr. V. Casari for a model of a model which might serve for Byron or Millais.

We were glad to notice that the judges endorsed our view regarding the enlarged photographs finished in oils, J. W. Bridgman winning well with the portrait of a lady, and Butler Bros. taking second with the portrait of a man, a lady in a hen in pasture—to which we have already called attention—having been awarded an extra prize. She looks one of those women of whom Steele spoke by inference when he said, to know a certain acquaintance of his was a "liberal education." Then we have photograph portraits finished in Indian ink and also in water colours. That of a lady by Mr. Matthews, Toronto, being especially good. In the mixed style water colours finished with crayon, Miss B. Gunn takes the first prize with some dogs' heads well executed. We would advise the visitor to look out for "El pont Carrara Florence" by W. D. Wilson. Mr. J. Love, Niagara, exhibits some painting on velvet which is not unworthy of a spell of attention. In plain crayon Miss Westmacott takes the first prize with a stag well executed—the second falling to Mr. C. L. Taylor—for a similar subject not well done. Mr. J. McKay has some pen and ink sketching exceedingly good and these and some of his pen and drawings lead us to think he would make a admirable addition to the staff of an illustrated comic journal. Mr. C. Chapman has done well in sepia the caressing fondness of a man who takes his donkey within the sphere of his sympathies, and has deservedly won the first prize; the second falls to Miss M. J. Reid. Miss Nancy Strickland has sketched the humorous of a fashionable wedding with great spirit and a fine sense of the ludicrous solemnity and forms which await the nuptials of the great, but is she not afraid the married people will dub her a bitter maiden? Miss Westmacott has much good work at this exhibition—but her pencil drawing of "Lady Jane Grey's victory over Bishop Gardiner" is the best thing she exhibits—and is worth a good deal of the oil painting. The passion of the discomfited Bishop and the calm of Lady Jane—are finely rendered. The Sacred Family (Miss Nancy Strickland) takes the next

Harking back to the oil paintings we find Mr. H. Macquindale (Toronto) taking an extra prize for a "Marius View"—his ship being well caught in the surge of a storm, as does Miss Westmacott for a charming bit of Mountain landscape. In the "Canadian Landscape"—Mr. F. H. Verner takes 1st prize with a river on which we have already remarked. The second prize is given to Mr. J. C. Whale for his fox and landscape—the fox being the main feature of the picture. Mr. Baigent gets 3rd for a very charming piece of river scenery. Mr. Verner's "Eagle Rocks" of course was first among marine Canadian subjects, Mr. Thos. M. Martin taking second with his lake scene, and sportsmen posed in a manner sportsmen never were. J. W. Bridgman takes the first prize from the portraits, with a lady in velvet; Mr. R. Whale the second, with a lady in pink; as also the third, with a lady caressing her daughter.

We are happy to say that the judges have awarded the 1st prize in figure subjects to "La Tanka-Nozin," a picture of Mr. Verner's which has great merit. The 2nd is taken by Mr. T. W. Bridgman by that handsome boy on an "impossible rock" in an impossible landscape. They have also endorsed our judgment in "Annals from life," Mr. R. Baigent's "Musk rats" winning by a large vote, and Robt. Whale's racoon eating Indian corn takes a fine second. The judges evidently think all we have said about Mr. Ambrose's picture just for they have given it the 1st prize, Mr. Chas. Chapman getting the second for a valley with pine hills on either side, the fiery colours of the Fall being admirably rendered. The third prize falls to Mr. Baigent, for a landscape in which we have already commented and which ought to have been second. But the kunst ist lang Und kurz ist unser Leben in a sense different from that of Goethe, and so we pause again, expressing the emphatic opinion that the art gallery reflects honour on Canada.

DRAWINGS, ARCHITECTURAL; ENGRAVINGS POTTERY, &c

In stained glass the exhibitors are Mr. Joseph McCausland, Toronto, who shows a chancel window of Brampton Church, containing a number of illustrations of sacred history, executed in an highly artistic manner, a staircase window for private dwelling in stained work, and specimens of white and coloured embossed work for halls in dwellings; all of these of very beautiful appearance and eminently chased design. Mr. McCausland also exhibits some very fine specimens of enamel painting, which were much admired. The collection of specimens from the "Ontario Stained Glass Works," London, consisting of chancel windows, as formed conspicuous objects of admiration, both in their designs and in beauty of coloring.

The arts of lithographing and letterpress printing are adequately and handsomely represented by Messrs. Copp, Clark & Co. and Bell & Co., Toronto, the former of whom exhibits specimens of lithographing of a high style in the art as well as specimens of letter press. Messrs. Bell & Co. have also a large selection of varieties in letterpress in excellent style, including what is described as an "Album bound to Toronto," containing a number of fine photographic views of the city.

In specimens of penmanship the display by the "Canadian Business College," is plain and ornamental writing, are of the highest excellence, including forms of balance sheet, cards, &c., and pen and ink drawing. Odell & Trout, "British Ameri-

can Business College," also contribute a large collection of specimens of penmanship, which command admiration.

Mr. C. Potter, Toronto, contributes a collection of mathematical and philosophical instruments—with specimens of a school seat and desk; all viewed with high favour.

Mr. James Arthurs, Toronto, exhibits a case of orthopedic instruments of admirable adaptation—as remedial aids for deformity or weakness in the spine, limbs and feet. This is almost a new branch of manufacture in Canada, in which the exhibitor is sanguine of being able to compete with imported articles. These specimens are beautifully finished. Mr. Arthurs also exhibits specimens of artificial limbs of excellent workmanship.

Mr. A. McLaren, London, is also an exhibitor of artificial limbs, of seemingly admirable adaptation.

Mr. James Fisher, Portsmouth, exhibits a model of a screw propeller shaft, fiction gear, by which the friction is reduced to a minimum.

Messrs. Brown & Rantz, Hamilton, exhibit the only specimens of engraving on copper, and Mr. H. Blandford, Hamilton, exhibits a collection of modeling, the gilding and designs in which are exceptionally fine. Messrs. Bonman and Wiseman, Boston, are exhibitors of a very fine collection of moulding for piano and cabinet work.

In materials in building construction, the "Aldershot Brick Co.," Warboro', exhibit specimens of their work, which have received favourable notice.

Close & Falconer, Woodstock, take first prize for kiln-burnt bricks.

Welding & Edding, Elizabeth, exhibit a splendid collection of stove ware and crockery ware of every sort of convenience and design.

A collection of slates for school and roofing purposes is exhibited by the Lanville Slate Co., Quebec.

Mr. T. G. Craffe, Mount Forest, exhibits a specimen of road cement which has been commended by the judges.

LADIES' WORK

In this department there is, as usual, a large and attractive display. We shall briefly notice a few of the most meritorious articles in the collection.

The first thing in this department to strike the eye is the display of fancy quilts, of which there are about a couple of scores of different pleasing designs. Some pretty specimens of rag carpet and rag rugs are also shown.

In fancy work we have a very pretty display, in which Miss M. H. Brown, of Chatham, Misses Sarah and Mary Strickland of Ottawa, and Miss E. Lyons, of Westland, are close competitors. Of this description of work, a pair of crimson velvet slippers, beautifully ornamented with clear glass beads and imitation pearls, the work of Miss Brown, the lady first mentioned, are such as a princess might be proud to wear. A purple velvet cushion, beautifully ornamented with beads, the work of Miss Carrie Louisa Taylor, of Caledonia, is also worthy of special mention.

The specimens of braiding shown are generally excellent. The exhibitors of this description of work are the Misses Mary and Nancy Strickland, Miss Lyons, Miss S. A. Mason, Trafalgar Mills; Lavinia Parkinson, Eramosa; and Miss Bates, Hamilton.

The crocheted work shown is of average merit.

Miss Harriet Pettit, of Trafalgar; Miss Jane Green, of Norwichville; Miss Bates and the Miss Strickland show some very pretty specimens of embroidery in muslin. The same ladies are exhibitors of embroidery in cotton.

Miss E. J. Lyons, of West Flamboro, and M. A. Douthy, of Hamilton, each exhibit a child's dress, tastefully embroidered in silk. A pair of slippers exhibited by Miss G. Lamb, of Toronto, and which are embroidered with silk of various colours and gold bullion thread, are evidently the result of considerable patient needle-work.

Miss A. Carmichael, of Nairn, shows a specimen of worsted embroidery on worsted. A child's dress, showing the same description of work, is exhibited by Miss M. A. Freeman, of Mulmur. A couple of pictures in worsted, shown by Miss Lyons, are also worthy of note.

Some extremely fine knitting, with cotton thread, is shown by Miss Cheate, of Ingersoll.

The Misses Strickland and Miss Bates, are competitors in some very fine guipure work.

Mrs. Wm. Young, of Colborne, exhibits a pair of fancy knitted stockings and a fancy knitted counterpane.

Some very fine lace work is shown by Miss E. Bidwell, of Cramahe, Miss M. A. O'Carroll, of Belleville, Miss A. Smyth, Toronto, Mrs. C. L. Thomas, Hamilton, Mrs. A. H. Cranston, Galt, Mrs. James H. Green, Norwichville, Miss Lyons, West Flamboro, Miss Sylvester, Hamilton, and Miss Mary Croft, Yorkville.

Under the head of fancy needlework, two regalia collars, richly ornamented with silver bullion thread, are exhibited by Miss Lyons.

Some of the most delicate pieces of work in this department are the very pretty specimens of fancy netting shown by Miss M. J. McMillan, of Galt, Miss Bates, of Hamilton, Mrs. H. Reed, of Glanford, Mrs. Chas. Wright, of Binbrook, Mrs. Cranston, of Galt, Miss Lyons, of West Flamboro, and Miss Lizzie Brown, of Chinguacousy.

Several gentlemen's shirts are shown, and as usual, they are almost without exception overlaid with plaits and frills.

The tatting shown is extremely fine, both as regards the work itself and the beautiful patterns. The exhibitors are Miss M. McMillan, of Galt, Mrs. Alex. McGregor, Miss E. Bidwell, Cramahe; Miss Annie Lyons, Dundas; and Miss Powell, Cobourg.

Miss Lyons exhibits two extremely beautiful specimens of Indian bead work, on which she has been awarded a first prize.

Miss E. Bidwell exhibits a very pretty specimen of fancy knitting called the "Princess Alexandra apron."

Miss Annie Moss, of Hamilton, exhibits a set of doll's bed clothing, which reflects great credit on her taste and skill with the needle and netting hook.

Miss Mary Strickland, of Oshawa, exhibits a set of toilet mats, cushions, &c., tastefully braided.

Mrs. L. S. Lundy, of Drummondville, and Mrs. E. Walker, of Onondaga, exhibit some specimens of plain hand sewing, than which the sewing machine work in the vicinity is scarcely finer.

Several specimens of knitting, in the shape of woollen mits, socks and stockings, are shown, and some of the stitches are very ornamental.

Several strings of buttons, one of which, shown by Miss H. McPherson, of Hamilton, contains specimens of 1,400 different kinds, are exhibited.

A moss picture, representing a scene in the Thousand Islands, has brought the exhibitor, Mrs. Band, of Toronto, the first prize. Another very pretty picture in the same style of art is shown by Miss Sarah Strickland.

Miss Minnie Davis, of East Flamboro, and Mrs. Ghent, of the same township, enter into competition with two elaborate leather-work picture-frames, in the construction of which the form of grapes and vine leaves has been very closely imitated.

Miss Mary Strickland exhibits two hand-screens, consisting of silk embroidery and feather work.

Miss Mary Strickland exhibits a specimen of pearl painting, representing a paroquet in all the glory of his brightly coloured plumage. A piece of crystal painting, representing a vase of flowers, is shown by Miss Sarah Strickland.

Mrs. James Park, of East Oxford, exhibits a specimen of a now and very beautiful fancy work, viz., a case of flowers, constructed of muslin of different colours.

Mr. George Ellis exhibits on the head of a wooden beauty a complete head of hair, elaborately done up and very natural in appearance.

Miss A. Lyons exhibits a "water-lily mat," in which water lilies and moss are very cleverly imitated in woollen yarn and Berlin wool.

Miss M. C. Biggar, of Saltfleet, exhibits in a picture frame a wreath of dried flowers, ferns, &c., which is very pretty. A wreath of dried flowers in a large case is shown by Mrs. James Park, of Oxford Centre.

Miss Lizzie Brown, of Chinguacousy exhibits a white hair wreath. Specimens of the same work are shown by Miss E. J. Lyons, and by Mrs. H. Burkholder, of Hamilton.

Miss Lyons has been awarded the first prize on a banner fire screen, beautifully ornamented with a paroquet and a bouquet of flowers in raised worsted. Some very pretty raised worsted flowers, shown by Miss Bates, of Hamilton, have taken the second prize.

An exceedingly pretty piece of worsted work in carpet pattern, ornamented with representations of human figures, animals and flowers, is shown by Mrs. Colbeck, of Hamilton. Miss A. McGregor, of Galt, and Miss Bates, of Hamilton, each exhibit a couple of frames of plain worsted work.

Miss Mary Strickland exhibits a camp chair, the back and seat of which are in worsted.

Miss Sarah Brydges, of Hamilton, has on exhibition a specimen of feather flower work, representing a lyre. Mrs. James Park has taken the first prize on a large case of feather flowers, and the third prize for a case of the same has been awarded to Miss M. Duffy, of Binbrook. Very pretty cases of feather flowers are also shown by Miss A. V. Terrybury, of Clinton; Miss Emily Brydges, of Hamilton; Mrs. D. Biggar, of Saltfleet, and J. A. Daniel, of Ancaster.

Miss Alice Land, of Saltfleet, and Miss M. Duffy are exhibitors of magnificent seed wreaths.

Miss Amelia Cook, of Barton, exhibits what is ticketed as a moss picture, but which is rather a moss wreath.

Miss Nancy Strickland exhibits a very beautiful specimen of shell work in the form of a lady's workbox. Miss Lyons exhibits a handsome shell work picture-frame and has very appropriately placed in it a water colour picture of sea shells.

Mrs. Colbeck exhibits a large worsted-work picture, representing, we presume, the

reception of Christopher Columbus by Isabella upon his return from the discovery of America. The figures are extremely well portrayed. Another excellent representation of a historical scene, in worsted, is shown by Mrs. J. W. Bridgman, of Toronto.

Of wax-work there are several magnificent specimens. The cases of fruit shown by the Misses Lyons are temptingly natural. The same ladies also exhibit some very creditable imitations of shells. Miss M. A. Harris, Mrs. Appleton, and Mrs. S. R. Kane, of Hamilton, and Mrs. Heaslip, of Toronto, each exhibit a beautiful white wax cross and flowers. Mrs. Heaslip, with Mrs. A. Harron, of Hamilton, exhibit a case each of wax flowers. Mrs. Heaslip exhibits, clinging to a cross, a very fine imitation of the English passion flower. A case of wax shells exhibited by Mrs. Park is most commendable, a very large number of different sea-shells being very cleverly counterfeited. Mrs. Appleton shows a pretty little case of wax water lilies.

Miss E. J. Lyons exhibits two cases of very well-preserved skeleton leaves and ferns.

Miss Isabella Graham, of Hamilton, exhibits a case of hair jewellery, consisting of bracelets, brooches, ear drops, watch guards, &c.

Miss C. King, of Hamilton, exhibits a pretty little ornament constructed of perforated cardboard.

Mrs. James Park exhibits a case of Berlin wool birds and butterflies, which look quite natural.

Mrs. J. W. Williams, of Hamilton, exhibits three cases of skeleton leaves, which are particularly worthy of notice.

Mrs. M. C. Biggar, of Saltfleet, has taken the first prize on a large seed wreath.

Mrs. James Park, M. E. Smith, of London, and Miss L. Brown, of Chinguacousy, each exhibit a case of silver wire and Berlin wool flowers, and have been awarded the first, second, and third prize respectively.

Miss M. Snively, of St. Catharines, exhibits sheet-wax of various colours for the manufacture of wax flowers, &c.

#### GROCERIES, PROVISIONS.

To begin at the beginning, George D. Morse & Co., Toronto, exhibit a variety of soaps, candles, and analogous compounds of housekeeping utility. Raising this class of articles to distinction, Mr. Morse has erected a column, in the classic form, of soap, 15 feet in height, which is with some incongruity placed on the stand with the musical instruments; forming a conspicuous object, whose device might be, "Down with dirt." He also shews some samples of lard oil. Dickson, Benning & Co., Paris, exhibit some samples of plug tobaccos, of their own manufacture. There are also a few samples of cigars.

The Edwardsburg Starch Co. shew a fine parcel of this commodity, so suggestive of the laundry. The Ontario Starch Company also contribute in this line.

Dr. E. H. Shourds, Thorold, exhibits a variety of bottled fruits and vegetables, which are warranted to keep for years (under a patent) without sealing.

In provisions, we noticed Morgan Bros., Hamilton, exhibitors of Graham flour, cracked wheat, Indian corn meal, and split peas. Among other exhibitors we notice the names of James Russell, who contributes fine samples of pot and pearl barley; John Cox, who shews some buckwheat flour; and G. W. Rymal, Waterdown, who also exhibits in these articles.

Recurring to bottled fruits and pickles, we mention the names of Miss E. J. Lyons, West Flamboro, E. L. Hopkins, Stony Creek, and A. Ghent, as successful exhibitors.

FINANCIAL SUCCESS.

HAMILTON, Sept. 27th.

The exhibition came to a close to-day, after another day of that exceptionally fine weather for this season of the year which has prevailed every day during the week. Never before, we believe, in the history of these exhibitions have the meteorological conditions been so entirely favourable. Both financially, which is of great importance, and in other respects the show has proved a great success. The receipts during the week have been as follows :

Monday and Tuesday.....	\$ 801 87
Wednesday.....	5,059 57
Thursday.....	5,925 00
Friday.....	777 52
<b>Total.....</b>	<b>\$12,563 96</b>

For purposes of comparison we give also the receipts for last year at Kingston, which were as follows :

Monday and Tuesday.....	\$ 278 42
Wednesday.....	2,983 44
Thursday.....	2,695 05
Friday.....	278 42
<b>Total.....</b>	<b>\$6,235 33</b>

The above figures afford a strong argument for the holding of the exhibition as far eastward as Kingston as seldom as possible. When it was last held in Hamilton, four years ago, the total number of paying visitors who attended it was about 14,000 less than the receipts for this year represent, and yet even then they were about 10,000 more numerous than last year.

ANNUAL MEETING.

THE PRESIDENT'S ADDRESS ;

The annual meeting of the Agricultural and Arts Association was held this evening, about 300 delegates being present. Stephen White, of Chatham, on taking the chair, read the Annual Address, as follows:—

GENTLEMEN,—One year since, on an occasion similar to this, we enjoyed the privilege of listening to the address of my predecessor. How short that time appears when looking back on the past. Then, we were assembled at Kingston—the point farthest East at which these annual gatherings have as yet been held ; now we are brought into direct communication with the citizens of this ambitious city of Hamilton, which, I believe deservedly, ranks first among the manufacturing centres of our vast Dominion. Our fairs here have ever proved a success ; and when I look over our grounds on the present occasion, I feel that the farmers, mechanics and others who have contributed to this vast collection have indeed something of which to feel proud, and may well rest assured that they are contributing to the building up of that national prosperity and greatness to which we may justly look as the boast of our prosperity. We have great cause of thankfulness to a kind and beneficent Providence for continued peace and prosperity ; and although the drouth in the early summer affected the crops in some localities to a considerable extent, and the West has suffered severely from the ravages of the Colorado potato beetle, which has now

become one of the worst enemies with which we have to contend, yet the labour of the present year generally has proved so productive and remunerative to the husbandman that we have plenty and to spare, and all are blessed with ample to provide the necessities and comforts of a home. The cultivation of flax is increasing in extent, and is marked with decided success, so that those who have advocated its introduction have every reason to anticipate that it will soon rank among our staple productions. As our country becomes more opened up, we see the greater necessity of providing green food for our stock, particularly cattle, during the summer months, when the grass has become parched and dried up by the hot weather ; the experiment of sowing broadcast, or thickly drilling Indian corn at different times during the season, so as to be cut and fed to them, has been tried with success, and is likely to prove a great boon to the dairymen. The results of our labours for a short twelvemonth have been brought together and openly exposed to view, and let those who see be judges of the fertility of the fair Province of Ontario, and of the ability of her sons in yet forming the nucleus of one of the strongholds of the British Empire, or, if need should arise (which I pray may never occur), of forming the centre of a great and prosperous independent nationality. Our motto is "defence, not defiance," and, as was said by my predecessor, although ready on any and every occasion to resist oppression, we have nothing to gain from, nor do we desire, an aggressive policy. Our aim is to promote the peace and goodwill, the wealth, intelligence and happiness, of nations. The drainage now being carried on in the Western Peninsula, by opening up the natural water courses, and in some cases cutting artificial ones, is producing a marked and growing effect. Lands which heretofore were totally unfit for cultivation and worthless, with the exception of a small growth of wild grass for pasture are rapidly being brought under the influence of the plough, and are found to be the most fertile, productive and remunerative, thus amply rewarding the proprietor or tenant for any costs he may have incurred in their production.

In looking over the past few years, I can not but observe the many changes through which we have passed and are passing ; one of the principal of these is in the manner employed in carrying on the operations of the farm. He who hires farm labourers now can seldom obtain native born young Canadians or Americans, farmers' sons bred up in their fathers' farms and at home in all the minute of farming, such as were the hired men on our farms a few years ago. Nor is it any less difficult in most sections of the Province to obtain a farmer's daughter as the hired girl either for housework or dairy. To obtain skilled labour now-a-days is in fact one of the greatest difficulties to be contended with in carrying on a farm. Fortunate indeed is it for us that so many labour-saving machines were introduced before this great want had become so great. I do not wish it to be understood that I fail to appreciate our indebtedness for vast individual and national prosperity to the strong arms and stout hearts of our foreign immigration ; but that class of labourers require a long and patient teaching before they are capable of managing our machines, of handling our teams or of understanding our system of farming generally. Yet these men are apt to expect the wages of our first class Canadians. Besides, as a general rule, unmarried men of that class are unsettled in their habits, roving, and with no local ties to bind them, ready to leave for trifling causes

or small inducements of higher wages. The question is becoming serious ; but how is it to be avoided ?

The most feasible system appears to be that of encouraging the employment of married men and building suitable places on the premises in which they and their families can reside ; thus they become permanently settled and feel that they have a home of their own ; their interests become more and more identified with ours, and our influence is more directly brought to bear upon them and their growing families, so that they much more rapidly develop into Canadians and citizens. By this means they not only board themselves but we can frequently avail ourselves of the much needed household assistance, thereby also relieving our detached wives and daughters. If such a system were generally introduced I believe all parties, and especially the labourer, would be better satisfied and permanently benefited. Another very pleasing change is found in the constant improvement which is taking place in the country. The dense forest is fast giving away, and where only a few years since the hardy pioneer could with difficulty find the means to furnish scanty subsistence, we now find the thrifty farmer with his land cleared and well tilled, his humble dwelling replaced by one more suited to his present wants and comforts, his outbuildings being renewed or extended to meet the requirements of his increasing stock, which is every year becoming more valuable by importation and direct crosses with pure blood ; his orchards, now approaching maturity, supply every want with the choicest varieties of fruit, and he begins to think the pleasure derived from looking at a few shade or ornamental trees will amply reward him for care and cost of providing. In short, he just begins to feel a self-respect and independence which more properly belongs to him than any other calling. There is another change which, though not productive of emotions of pleasure, yet demands more than a passing notice. I refer to the growing aversion exhibited by many of our young men and boys to honest, manly toil, the tendency to leave the farm for the whirl and excitement of the city uncertainties of the professional or commercial life. The very term "Commerce" seems to carry with it a kind of magic spell, and they forget that it is rarely one in a hundred who succeeds in his speculations and accumulates a fortune ; yet some agency or patent right ; in short, anything that demands travel or produces excitement, has a fascination for the young man that seems irresistible, and we frequently meet sound, able-bodied young men peddling the country over with some simple little contrivance, with an energy that would do honour to a better cause. Commercial pursuits are over-valued because they lie more upon the surface and are open to observation, but he who is successful has often, nay, always, to toil and labour far more unceasingly than the agriculturalist. This can only be counteracted by making home pleasant to them, and so educating them that work on the farm shall not be considered mere drudgery but an intelligent use of the resources of nature. Nowhere else do intelligence and taste so readily ripen the conceptions of the mind into utility and beauty. Go to the towns and cities and you will find that a large majority of those who went there as country boys, instead of achieving wealth and fame, have attained to less than they would have enjoyed had they followed their agricultural pursuits, and many are rapidly sinking into the lowest depths of degradation and misery. I have very great pleasure in being able to

say that the Ontario Veterinary College is being carried on with much success, and is increasing in numbers and popularity. During the past winter the number of students attending its lectures was upwards of fifty, and at the last examination fifteen candidates were awarded the Diploma of the Board. The prospect is, therefore, that in a short time we shall have a skilful veterinary surgeon in every part of the Province, on whom to depend in every case of emergency. The grant to the Entomological Society is still continued with favourable results. Financially we are in a sound, healthy and prosperous condition, and, notwithstanding the very great falling off in our receipts at the fair last year, from that of the previous year, amounting to several thousands of dollars, yet we were able to pay all our liabilities and report a reliable balance in the hands of the treasurer. With regard to the Denison matter I have much pleasure in being able to say that a considerable portion has already been paid in and the balance is amply secured by mortgage on real estate which has increased fifty per cent. in value since the security was taken. It has been suggested that so grand an opportunity for discussion on agricultural topics as is afforded by the meeting of so many delegates and judges all leading agriculturalists from different parts of the Province—should not be lost; and although the members of the council might not be able to attend owing to pressure of other business at that peculiar time, yet a meeting might be organized, different topics of discussion selected, and such form a leading feature of our future exhibitions.

The thanks of the meeting were tendered the President for his address. He was requested to furnish the Association with a copy of it for publication. The Secretary, Mr. Hugh Thomson, then called the names of the delegates and read the minutes of the last annual meeting, which were approved. Dr. Beadle of St. Catharines and F. W. Stone of Guelph were appointed auditors. The next business was deciding on the place of the next exhibition.

COL. JOHNSON, of London moved that it be held in that city, seconded by J. C. Rykert, St. Catharines.

Mr. GEO. ELLIOTT proposed Guelph, and

Mr. JOHN MAIR, Warden of Wellington, seconded the motion.

Mr. IRA MORGAN, of the County of Russell, proposed Ottawa city, and Mr. ARCHIBALD McNABB, of Lochiel, Glengarry, seconded the motion.

Mr. MARTINEAU, Mayor of Ottawa, submitted a resolution of the Council authorizing the deputation from that city to guarantee the requisite accommodation in the event of the show being held next year at Ottawa.

Mr. RICHARD MITCHELL, Mayor of Guelph, submitted a similar resolution, adopted by the Council of that town.

Mr. John Campbell, Mayor of London, submitted on behalf of the Council of London guarantee of the required accommodation.

Hon. David Reesor moved that Toronto be selected as the place for the next exhibition.

Mr. D. Stoddart, of Bradford, seconded the motion of Mr. Reesor.

After some further discussion, Mr. Reesor withdrew his motion, and the vote was taken, with the following result:—London 77, Ottawa 35, Guelph 29.

No other important business was transacted.

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**Markets.**

**Toronto Markets.**

"CANADA FARMER" Office, Oct. 15, 1872.

The produce and provision trades have been quiet during the past month. The general tendency in breadstuffs since this day month has been downwards in this market, owing partly to declining prices in England, and partly to the advance which took place in railway freights the last week in September. The amount changing hands, however, both in flour and wheat have been limited, holders selling only when compelled to do so. Barley has been moving pretty freely to the extent of receipts, which however have been much below what came forward up to this date last year. Prices have been well maintained in the vicinity of recent quotations.

In this city the wholesale prices are as follows.—

**FLOUR AND MEAL.**

- Flour—Superfine, \$5 45 to \$5 50, Family, \$5 30 to \$5 40.
- Oatmeal—\$4 60 to \$4 70.
- Cornmeal—\$3 25.
- Bran—\$13 to \$14; 50.

**GRAIN.**

- Wheat—Fall, \$1 28 to \$1 35; Spring, \$1 20 to \$1 25.
- Barley—No. 1, 70c to 72c; No. 2, 68c to 70c.
- Oats—30c to 40c.
- Rye—Nominal, none offering.
- Peas—65c to 68c.

**HAY AND STRAW.**

- Hay, in small supply, at \$24 to \$29 50.
- Straw—\$14 to \$16, in short supply.

**PROVISIONS.**

- Beef, by the side, Nominal.
- Mutton, by the carcass, 8c to 10c.
- Potatoes—per bag, 65c.
- Pork—Mess, \$17 50, small lots.
- Hacon—None in this market.
- Hams—Salted, nominal.
- Lard—10 1/2c to 11c.
- Butter—Choice, 16c to 18c, good selected, 14c to 15 1/2; ordinary to medium, 8c to 11c.
- Eggs—Packed, fresh, 16 to 17c.
- Cheese—11 1/2c to 12 1/2c.
- Dried Apples—9 1/2c to 10c.
- Salt—Goderich, \$1 40 to \$1 50;

**HIDES AND SKINS.**

- Hides—No. 1, cured and inspected, per lb 3 1/2c; No. 1, inspected, green, 8c, No. 2, inspected, green, 7c.
- Sheepskins—\$1 00.
- Calfskins—Green, 10c to 12c.
- Wool—Fleece, 45c.

**THE CATTLE MARKET.**

- Bovine (live weight) \$2 55 to \$4 50 per 100 lbs
- Sheep—\$3 to \$5 00.
- Calves—\$3 to \$7.
- Lambs—\$2 50 to \$3 50.

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