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THE ILLUSTRATED JOURNAL OF AGRICULTURE

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OUR ENGRAVINGS.

Cotswold sheep, bred by Messrs. G. Snell & Sons, Edmonton, Ont. — Skeleton of the horse, and horse's foot, &c.—Poultry house.—Hambledonian stallion, Alexander H. Sherman; Bred by Mr. Baikman, foaled in 1870; by Baikman's Idol, he by Rysdyk's Hambledonian, back through Messenger, Morgan, Bashaw, to imported Diomed.

Meeting of the Council of Agriculture of the Province of Quebec.

Official report of the deliberations of the Council of Agriculture of the Province of Quebec.

Quebec, August 27th, 1879.

Present: The Hon. Messrs. Cochrane, J. Gaudet, Beaubien and Messrs. Benoit, Blackwood, Browning, Casavant, Casgrain, Deblois, Gibb, Guilbault, Massue, Pilote and Sommerville.

The President having taken the chair, the Secretary read the minutes of the last meeting, which were approved.

The President then stated that, at the request of the Premier, he had called a special meeting of the Council to take into consideration the propriety of establishing a Beet-Sugar factory, and a manufactory of Superphosphate of lime, in this province. He had learnt, however, since his arrival at Quebec, that the Government had settled the former question, so that there only remained for the consideration of the Council the establishment of a manufactory of Superphosphate.

The Secretary read the report of the Committee on phosphates, of the 20th of November 1878.

At the request of the President, Mr. LeSage, deputy Commissioner of Agriculture, was introduced. He stated that, for several reasons, the Hon. Commissioner had disposed of the question of the establishment of a Beet-Sugar factory, in favour of Mr. Loomer, and after several observations from Mr. Casavant on the subject, the question of phosphates was discussed, and it was proposed by Mr. Blackwood, seconded by Mr. Casavant: That a committee be named, composed of Messrs. Massue, Benoit and Browning, to come to an understanding with the Government, as to the establishment of a Superphosphate manufactory, and as to the encouragement it

should receive, as well as to support the views of the Council on this important subject. (carried).

Mr. Browning called the attention of the Council to the promise made by Mr. Joly, at the meeting of the 20th of November 1878, to enter, in the estimates of the present year, a sum of \$500.00 to be given by the Council for the encouragement of "fruit-growing firms."

Mr. Browning suggested that the sum placed this year in the estimates should be distributed through the Council.

Mr. Benoit, seconded by Mr. Gadet, moved:

That a Committee be named, consisting of Messrs. Browning, Beaubien, and Massue, to prepare rules for the government of the "fruit growing firms," to determine what share of the grant shall be given to each, and in general, to arrange all the details of their operations.

And the Council adjourned.

I certify this to be a true copy.

(Signed) GEORGES LEOLÈRE.

Montreal, Jan. 14th, 1880.

Present: The Hon. Messrs. Beaubien, Cochrane, Gadet, Ouimet; Messrs. Benoit, Blackwood, Browning, Casavant, Faribault, Guilbault, Marsan, Massue and Sommerville; the Revds. Messrs. Pilote and Tassé.

The President, having taken the chair, the Secretary read the minutes of the last meeting which were approved.

The President then read his annual address.

Resolved: That the address of the President be received with thanks.

Mr. Browning, seconded by the Revd. Mr. Pilote, moved:

That Mr. Massue be re-elected President of the Council for the present year.

Mr. Blackwood, seconded by Mr. Sommerville, moved:

That the Hon. Mr. Gaudet, be elected Vice-President of the Council for the present year.

The report of the Committee appointed to visit the schools was read.

Resolved: That the report of the school-committee be received, the thanks of the Council given to the Revd. Mr. Pilote for the information given in the said report, and its consideration deferred until the next meeting of the Council.

The Hon. Mr. Gaudet, seconded by Mr. Benoit, moved:

That the next Provincial Exhibition be held at Montreal, and that the Government be requested to name, as soon as possible, a joint Exhibition Committee as directed by the law, and to provide sufficient funds to carry it out successfully. (carried).

The regulations for the management of "Fruit-growing firms" were read.

Resolved: That the rules prepared by the Committee for the regulation of "Fruit-growing firms", be approved, and that the sum of \$50.00 (fifty dollars) be granted to the society of Abbotsford, as a mark of encouragement, and at the same time to aid it in printing its annual report.

A petition was read, from Mr. Charles Dannais, a member of the Agricultural Society of Terrebonne, complaining that, in the competition in that county, the judges gave points to a competitor for "well, managed manures," when the said competitor had no manures such as indicated in the VIIIth clause of the programme of the Council. These facts are confirmed by an authentic copy of the proceedings of the Terrebonne Agricultural Society.

The Revd. Mr. Tassé, seconded by Mr. Guilbault, moved : That the judges who visited and inspected the county of Terrebonne had no right to grant points, for well made and well preserved manures, to a competitor who had nothing of the sort.

The Hon. Mr. Ouimet moved in amendment.

That the words "had not the right to award points" be replaced by the following words: "have not infringed upon their duty in awarding points."

This amendment, not having been seconded, was declared by the President to be out of order, and the original motion was carried on the following division :

For, Messrs. Benoit, Browning, Casavant, Faribault, Gaudet, Guilbault, Sommerville and Tassé (8).

Against: Messrs. Ouimet and Marsan (2) : Mr Blackwood not voting.

The Council then adjourned till 2 p. m.

Afternoon session Jan. 14th. 1880.

The same members being present, Mr. Miller, Secretary of the Drummond Agricultural Society, was introduced, and requested leave of the Council to sell, on account of the said Society, a piece of property, known as the Hall of Agriculture, said by Mr. Miller to belong to the Society.

After a discussion, it was resolved: That the request of the Society to be allowed to sell its old hall of meeting be referred to the executive Committee, which Committee is charged to enquire into the matter, and to report on it at the next meeting of the Council.

A petition was read from the county of Huntingdon, requesting leave to allow the entrance into competition of people living beyond the limits of the said county.

Resolved: That the petition of the county of Huntingdon be granted.

Mr. Faribault, seconded by Mr. Ouimet, moved:

That Messrs. Browning and Massue be named auditors for the present year. (carried).

A letter was read from Mr. Brodie, Secretary of the Hochelaga Agricultural Society, requesting the remission of a fine imposed by the Council for neglect of his duties as Secretary.

Resolved: That the Council, finding that, since the imposition of the fine, Mr. Brodie has always conformed to the requirements of the Council, by transmitting with regularity his reports and other documents, recommends the remission of the fine. It was also resolved that in future the fines shall be remitted to those Secretaries also who, remaining in office, shall have deserved the remission, by their regular attention to the behests of the Council.

Mr. Marsan informed the Council that the Assumption Agricultural Society had not received this year the full amount of their grant, because the subscription of the members, consisting partly of money partly of grain, was not claimed by them.

Mr. Ouimet, seconded by Mr. Tassé, moved:

That, after examination of the documents belonging to this affair of the Assumption Agricultural Society, the Council decline to entertain its request, the Society having trespassed against the letter and spirit of the law: and that a copy of

this resolution be forwarded to the Secretary of the said Society. (carried).

The rest of the session was occupied by the discussion of the report of the Committee on schools, and the Council adjourned till the next day, Jan. 15th., at 9.30, a. M.

Session of January 15th., 1880—9.30 a. m.

The same members being present, the Council resumed the discussion of schools, and Mr. Ouimet, seconded by Mr. Tassé, moved:

That the report of the Committee on schools, (See the report of the department, June 30th 1879, p. 44) dated March 26th, 1879, be adopted, omitting all mention of the recommendation of payment to the Council of certain sums of money, and without binding by any means the Council to abide by the opinions expressed in the 5th. clause of the report. (carried).

Mr. Browning, seconded by Mr. Ouimet, moved:

That a Committee be named, to consist of the President, Messrs. Ouimet and Beaubien, to have, as soon as possible after the opening of the next session of the Provincial Parliament, an interview with the permanent Committee on Agriculture; and to ask for their influence and cooperation, to obtain the necessary pecuniary means to place the present schools of Agriculture on an independent footing, as recommended by the Committee, and if their request be not granted, it should be entreated to consider if the present be not an opportune time to establish a school of Agriculture, under the control of the government, like the College at Guelph, Ontario, or the one at Lansing, Michigan. (carried).

Mr. Browning, seconded by Mr. Tassé, moved:

That, after having heard the remarks of the Revd. Mr. Tassé on defects in the act of Agriculture, and the present organisation of the Council of Agriculture, and the admission that a change is necessary, it be resolved that a committee be named, composed of the President, Messrs. Tassé, Ouimet, Beaubien, and Browning, to enquire into the necessary changes; and to report to the Council, as soon as possible; and that as soon as the report shall be made, the President shall call a special meeting of the Council to receive the said report; and that Mr. Tassé be named President of the Committee, whose first meeting shall be at Quebec, at a time to be named by the President. (carried).

Mr. Benoit gave notice that at the next meeting of the Council, he will propose: That, considering the increasing exportation of cattle to Europe, this Council esteems it a duty to recommend the farmers of the Province of Quebec to purchase Short-horn Bulls, to increase the size of their race of beef-cattle, so as to place themselves in a position to profit by the trade.

A letter was read from Mr. S. M. Barré, of St. Hyacinthe, asking for aid in money, to establish a creamery at that place.

Resolved: That the Council have no funds at their disposal for that purpose.

Mr. Browning read a letter from Mr. Loomer, Junior, on the use of mineral phosphate of lime (pulverised apatite). The Council confirmed the resolution of the executive Committee, in which it expresses its regret at not being able to proceed any farther in the question of the employment of phosphates, not being yet in possession of sufficient facts as to the preparation and use of this manure to decide the question.

The Council having considered the question brought forward by the President, as to the distribution of seed by the societies to the amount of the members' subscriptions, Mr. Beaubien, seconded by Mr. Tassé, moved:

That, as to the distribution of seed by the Agricultural Societies, these societies should enter as the cost price of the

seed, all the expenses of carriage &c. to the place of distribution, the whole of these expenses being necessarily paid out of the subscriptions;

And that, for the next and every subsequent year, no more than half the amount of the subscriptions be devoted to the purchase of seed.

And that, in every county where at present, seed is distributed up to the amount of the members' subscriptions, only half of the said subscriptions be spent in seed, the other half being devoted to the purchase of improved breeding stock. (carried).

The report of the Director of the School of Veterinary Surgery was laid on the table, and it was resolved:

That the report of the Director of the School of Veterinary Surgery be referred to the Committee of the improvement of Agriculture, as regards the protection to be granted to the students who have received their diploma from the said school.

The Council then proceeded to name the following permanent Committees.

Executive Committee.—Messrs. J. M. Browning, President, Revd. S. Tassé, A. Sommerville, L. Beaubien, L. H. Massue, A. Casavant.

Exhibition Committee.—Messrs. L. H. Massue, President, L. Beaubien, A. Sommerville, J. M. Browning, P. B. Benoit.

Committee on Schools.—Hon. G. Ouimet, President, Messrs. L. Beaubien, S. M. Blackwood, S. Tassé, Hon. G. Gaudet.

Committee on Horticultural Societies.—Messrs. J. M. Browning, President, L. Beaubien, L. H. Massue.

With power to add to their number.

Mr. Browning, seconded by Mr. Tassé, moved:

That the Council regrets that neither the schools of Agriculture, nor the School of Veterinary Surgery, have sent in their annual reports, as ordered by the Council in its resolutions of the 27th. of October, 1870, and of the 22nd of October, 1875; and that the Secretary be instructed to write to each of the Directors of the said Schools, informing them that, for the future, their several reports must be sent in to the Council before the 1st of November in each year, under pain of their being deprived of their annual grant, notwithstanding any former resolution to the contrary; and that a copy of this resolution be forwarded to each of the said Schools. (carried).

The Council then adjourned.

(Signed) L. H. MASSUE.

I hereby certify that the above is a true copy.

(Signed) GEORGES LEOLBEE.

Washed or Unwashed Butter.

A few years ago an earnest controversy was carried on... as to whether butter should be washed or unwashed; those advocating the latter claiming that pressing or working out the buttermilk without the aid of water served to retain more of the aroma and delicious flavour naturally belonging to butter, and which should not be removed by allowing the butter to come in contact with water. On the whole, the advocates of washing butter were the most numerous, and as the art of butter-making had progressed they have had rather the best side of the argument. Of course it will be understood that good, clean, sweet water must be employed in washing butter, and that it never should come in contact with water having taints or odours of any description. The best butter-makers of the present endeavour to avoid working butter as far as possible, in order that the "butter-grain" may be kept uninjured and preserved in all its integrity. To accomplish this object the cream must not be overburned, for the butter is often seriously impaired in the grain by too much churning. *When the butter begins to form, or is in small*

particles about the size of wheat kernels or a little larger, stop churning. The butter is then in a granulated state, and the buttermilk may now be drawn off, and the grains of butter oven then be washed with cold water, and afterwards with brine, which will free it from all milky and caseous matter. Some drain the buttermilk from the churn in a hair sieve, and then wash by turning water on the butter in the churn. Butter treated in this way is never salvy or greasy, but remains with its grain uninjured, and should be in its best state. Thus, as our knowledge of what constitutes perfect butter obtains, together with the art of producing it, the old method of working out the buttermilk without the aid of water must be pushed aside for more intelligent and safer practice. In conclusion, it may be remarked that, whatever working is required, care should be taken to avoid a grinding motion, as it injures the grain. If a lever worker be used, the working should be by pressure, and the lever should not be allowed to stop or slide on the butter in a grinding fashion.

Butter-making may now be said to be approximating rapidly to high art. Consumers are fast being educated to distinguish the finer grades, and now regard with disgust those greasy, salvy, and rank flavours, which a few years ago could perhaps be tolerated. This is as it should be, for the old-time poor butters were not conducive to health, and were the cause many times of serious ills which the more educated taste now avoids.

Of course, we do not dispute the fact that large quantities of poor butter got upon the market, but the prices for such are so low that they do not pay the cost of production; and this helps to raise the standard, for price has a wonderful influence in stimulating to better methods, which the enterprising dairyman soon tries to reach. The creameries and butter factories have been great educators to butter dairymen, as they have been to the taste of consumers; and the spread of these institutions, with the knowledge they disseminate, will, we trust, at no late date, wipe out the great bulk of inferior and low butters.—X. A. Willard, in the "Country Gentleman."

VETERINARY DEPARTMENT.

Under the direction of D. McEachran, F. R. C. V. S., Principal of the Montreal Veterinary College, and Inspector of Stock for the Canadian Government.

Shipment from Glasgow of pure-bred cattle.

The Allan steamer *Buenos Ayrean*, which sails from the Clyde this afternoon for Montreal, takes out a large number of pure-bred cattle for Mr George Whitfield, of the model stock and dairy farm, Rougemont, Province of Quebec, Canada. There are altogether 48 animals, and consist of the polled Angus, Highland, Ayrshire, and Hereford breeds. Mr. Whitfield intends by his present purchases to found important herds on his estate in the colony, and the animals have been carefully selected for the purpose. At the head of the polled class stands "Judge" (1150), the hero of the Paris Exhibition in 1878. He is five years old, and was bred by Sir George Macpherson Grant, Bart., M. P., of Ballindalloch, from whom he has just been purchased at a handsome figure.

From the same herd "Nosegay" 6th (3370), a three-year-old cow, has also been purchased. She is altogether a very handsome animal, and comes of the oldest race of polled cattle in Ballindalloch. The other animal from Ballindalloch is a very highly-bred bull calf, out of the Sibyl cow "Syren" (1915), and after "Young Viscount," the well-known champion of many a field, which was bought at the Gavenwood sale by Sir George Macpherson Grant for 225 guineas. He was calved on 28th April, 1880, and has been named *Rougemont*, after the place of his destination. Two cows purchased at the Burnside sale we formerly referred to. The one is

"Mabel of Biallid, 3242," bred by Mr George Gordon, Tullochallum, and out of "Rosa of Westerton, 1908," which was the highest-priced yearling heifer at the dispersion sale of the Westerton cattle, and after "Talisman, 646," bred at Rothiemay: the other is "Fanny 3d, 3922," dam "Fanny 2d, 3951," by "Baronet of Ballindalloch, 406," out of "Bertha, 980," the first prize cow at the Highland Society's Show at Stirling in 1873. She is accompanied by a very nice cow calf, purchased from and bred by Mr J. Macdonald, Tormore, Advie, out of "Myrrha, 1735," and after "Petrarch, 1259," which gained the second prize at the Paris Exhibition in 1878. From the fine polled herd at Mains of Advie two very promising young animals have been purchased. The one is Mr Grant's stock bull, "Highland Chief, 1590," an animal of great substance and good style. He is after "Judge, 1150," and out of Miss "Fanny, 3111," by "Juryman, 404." "Highland Chief" has inherited many striking features of the Jilt family. The other animal from Mains of Advie is a splendid three-year-old heifer, with bull calf at foot, named "Britannia," both of which Mr Grant intended for exhibition this season.

She has remarkable substance, is very level over the top, and was shown successfully last year at the Strathspey Farmer's Club Show. Of the Galloway breed, two cows with calves at foot, and a bull have been purchased. They are from a famous breeder—Mr Cunningham, Tarbreoch, Dalbeattie, and are considered excellent representatives of the breed. The sire of the two calves at foot gained the first prize at the Highland Society's Show at Perth last year. Three fine Ayrshire cows, with calves at foot, were secured at the Castlehill dispersion sale in Dumfriesshire. The first one is "Yellow Bess," whose sire is "Bogwood," out of a first prize cow, "Ayrshire Lass," that was sold for £70. The second is "Hamilton," whose sire is "Geordie III," descended from a cow that was founder of the Castlehill stock. The third one is "Daisy," of equally good origin. They are of a famous stock which has been line-bred for half-a-century. A pure bull of good breeding has been obtained from Mr Bramwell, Blackaddie, Sanquhar. The shaggy Highlanders are to be more largely represented. A capital selection has been made of two cows with calves, and a young bull, at the dispersion sale of Corrychrone, Callander, Perthshire, a herd which has been celebrated for upwards of fifty years. The cows are of a light colour and great substance, with fine level broad backs. The bull was bred by the Duke of Argyll, and has a capital head and long hair. A black cow, and a dark-red one, were purchased at the Killichuntly sale the other week. Their calves are of the same colour as themselves, and very curly in the hair.

Three others are from Mr Mackintosh, South Kinrara.

Four fine Hereford cattle are from Mr Duckham, M. P., (1) and these, with a small lot of carefully-selected Blackfaced gimmers and two fine-bred tups from the well-known flock of Mr M'Gilivray, Doharn, Strathspey, complete the important consignment. Mr M'Gilivray, at the request of his old friend Mr Whitfield, has superintended the arrangements for the shipment.

The Foot of the Horse, and its management.

The importance of an accurate knowledge of the subject to our readers induces us to endeavour in a series of articles to familiarize them with this useful organ, which is as beautiful in its mechanism, and as wonderful an adaptation of a means to an end, as we can find in the whole range of the Creator's works. We all admit the truth of the adage "no foot no horse", we acknowledge the fact that it is perfectly adapted to its purpose, yet, we are painfully aware that derangements of the feet, directly and indirectly, cause more loss to owners

(1) And a genuine tenant-farmer, too.

of horses, than all other diseases to which the animal is subject.

Surely this is not as it should be; surely, under a proper system of management, this wonderful provision of nature, so perfect in its adaptation to its purpose, can be preserved in its utility even under the altered condition of domestication.

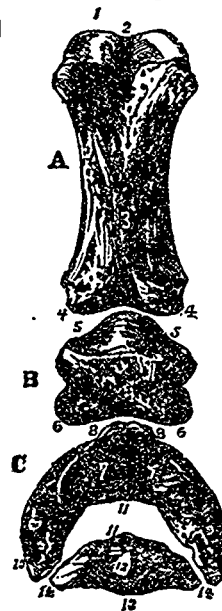
We hesitate not to say that it can; and that it requires but a knowledge of its structure and nature, and the practice of a little common sense on the part of those who have the management of horses, to maintain it free from disease.

ANATOMY OF THE HORSE'S FOOT.

The foot must not be looked upon or studied by itself; it must be studied in its relation to the limb of which it forms the terminal portion or end. It is the base of support, the fulcrum of the levers on which the efforts of the muscular contraction resulting in progressive movements of the body are concentrated. On the fore-limbs they are the weight bearers; while, on the hind, they are not only the bases of support, but the graspers of the ground on which the propulsive movements are executed.

No mechanical structure with which we are familiar has to serve so many important purposes, as has the horse's foot. It consists of the hard bony terminal digit, which is covered by sensitive vascular tissues necessary for the attachment of a softer, yet firm and elastic protective covering, capable of resisting tear and wear, which we find in the horny covering, the hoof.

We must refer to the uses and arrangement of the limbs, before studying the feet.



Horse's foot.

Fig. 1: represents the limbs in position. The fore-limbs will be observed to have no direct articulation with the trunk, being attached merely by muscles covered by the skin; the scapula *b* is placed obliquely on the side of the chest, on which it moves loosely, and articulates by its lower end with the humerus *c* at nearly a right angle, which in turn articulates with the radius *d* and ulna *e* by a large hinge joint. The radius *d* is a large strong bone, forming by its upper end the elbow joint, and by its lower the upper articulation of the carpus. This bone extends obliquely downward and forward, slightly arched, with the convexity in front. The knee (carpus) *f* is formed of two rows of irregularly shaped bones, covered by cartilage and joined by ligaments, the whole resting on the head of the metacarpus, forming a resilient buffer by which concussion is broken, and the effects of concussion avoided.

The metacarpus *g*, consisting of the head of the bone *h* and the heads of the two splint bones, *i*, is placed nearly perpendicularly, though, in most, slightly inclining downward and backward to the fetlock joint. The fetlock is formed by the lower end of the cannon bone and the large pastern which inclines forwards and downwards. To enable the tendons to be carried over the back part of this joint without hindrance to the action of either, a beautiful pulley surface is formed by the two *sesamoid* bones *k* lined by a cartilaginous ring. The small pastern bone *l* articulates with the large *in* nearly

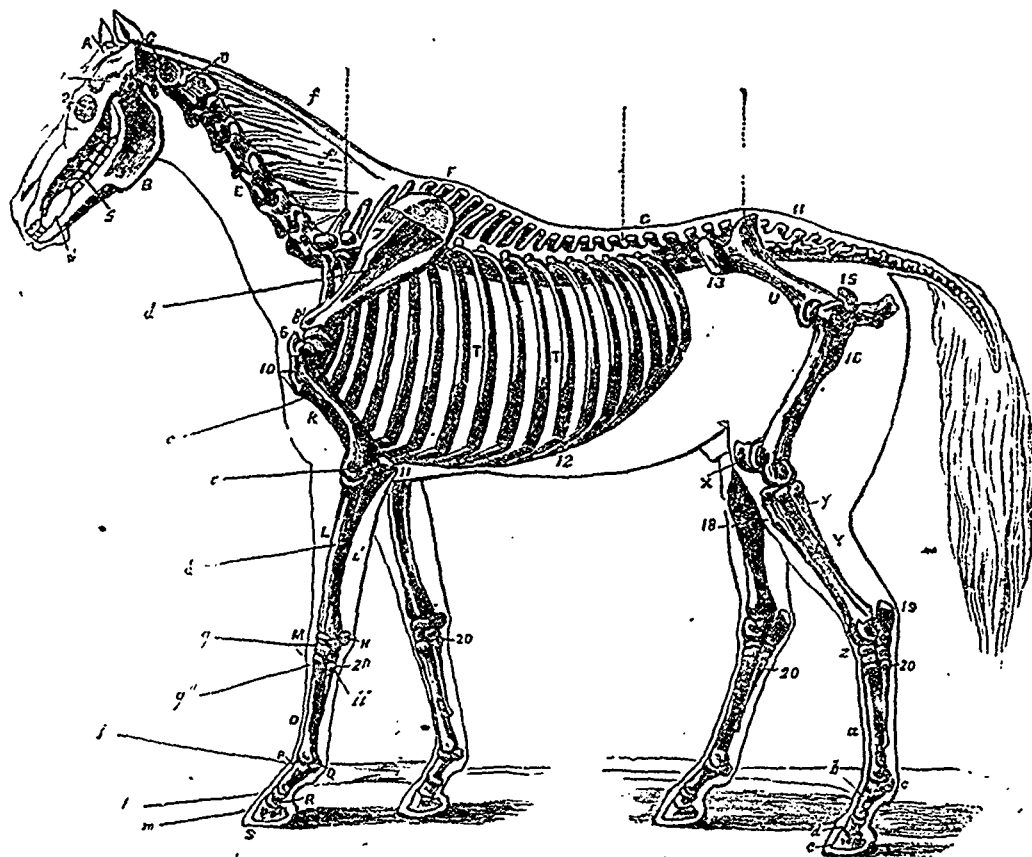
the same direction: this is a short, strong bone, which, by its lower end, articulates with the (*os pedis*) coffin-bone, forming the coffin joint. The *os pedis m* bone of the foot and its connections claim our more immediate consideration, as an important part of the structure of the foot. It is this bone which gives the size and form to the foot, especially the front sides and sole, the softer textures in all cases conforming to any alterations which take place in it naturally, or by disease. Placed upon a level plane surface it rests nearly level; in some cases it is slightly arched off the plane at the toe, and often slightly at the heels.

The lower surface is half-moon shaped, concave, and presents on the posterior part points of attachment for the *navicular* bone and ligaments, and a half-moon shaped depression for the insertion of the tendon of the *flexor pedis*.

most porous bone in the body, pierced by *foramina* in every direction for the accommodation of the *circulus arteriosus* and numerous blood-vessels necessary to supply nourishment to the vascular structures which cover it and secrete the horny covering.

It will thus be seen, that the pedal extremity of the horse's leg is, even in its bony foundation, a complex structure. Before proceeding to the study of the soft parts of the foot and the horny box, the hoof, by which it is encased, we will notice cursorily the ligaments by which the bones are connected, and the muscles by which they are moved.

Important as is the shoulder joint, it has no ligaments connecting the bones, except the capsular ligament covering and containing the oil of the joint. The muscles being so attached and disposed that they are not only the levers of



The skeleton of the horse.

Fig. 2. Its sides are prolonged backward by its *alæ* or wings, which are surmounted by two lateral cartilages, which serve to spread open the heels, and increase in a wonderful degree the general elasticity of the foot. In front of the articulation we have a prominence (pyramidal process), which serves the double purpose of preventing dislocation, and for the attachment of the *extensor* tendon.

The concavity behind is occupied by the *navicular* bone, which is a shuttle-shaped bone occupying the space between the wings, the lower surface being pulley-shaped and covered by cartilages, forming a beautiful pulley over which the *flexor* tendon plays on its passage to its insertion on the surface of the *os pedis*.

The general character of this bone is noticeable for its lightness, porosity, and toughness. The character of the bone of which it is composed is dense, hard, yet very porous, the

motion but also serve to hold the bones together.

As already remarked, the shoulder has no articular connection with the trunk, being loosely attached by muscles which increase the general elasticity, and prevent concussion and compression of the chest and consequently injury to the delicate organs contained in that cavity.

We find the muscles of the chest, shoulder, and fore-arm, so disposed as to enable them to co-operate in the elevation and progression of the limb in the most perfect manner, while the direction of articulation of the bones, the intervention of buffers, semi-elastic ligaments and lubricated pulleys at the knee, metacarpus, and fetlock, all show the wonderful omnipotence of the creative power to provide for the protection of the locomotive power in the animal.

We cannot contemplate the arrangement of the horse's leg from the knee downward, without being impressed with the

marvellous wisdom of the Creator, in planning for the comfort and preservation of his creatures. The foot, however, in the present article comes more immediately under our consideration.

We will, therefore, merely point out the ligaments and tendons which aid so much in providing that beautiful elasticity so characteristic of the leg of the horse, which so materially aids the structural arrangement of the foot, in preserving it from the injurious effects of concussion, and in the various altered circumstances to which it is exposed in a life of domestication and all its consequent mismanagement.

Season for castrating animals.

The season is a most important consideration. In pigs and others animals that tend to heal by adhesion of the lips of the wound and without the formation of matter, a cool or even a cold season is not prohibitory; but in the horse, in which all wounds tend to form matter, and where the dangers of inflammation extending to the abdomen are so great, a temperate or even warm season is the best. The end of April or May is usually preferable as being mild but not hot, and at the same time equable. From July onward the intense heats unduly favor putrefaction in the products of the wound, and excessive swelling in its walls. At this season, too, flies prove a source of great annoyance, and are even liable to infect and poison the sore by coming direct from carrion or diseased surfaces.

So long as the nights are liable to be frosty or very cold, colts should not be castrated unless they can be stabled and protected. In all cases the newly-castrated animal should be protected against cold rains or dews, drafts of cold air in buildings, large drinks of ice-cold water, and damp bedding. Wet weather, but above all that which is characterized by a succession of thunder storms, is to be feared, not alone because of the danger of wetting and chill, but because at such times there is a special tendency to rapid decomposition in all dead organic matter, and therefore to putrefaction in the secretions of the wounds. This tendency is familiar in the souring of milk or dough, and in the penetrating smells that rise from any accumulation of damp vegetable rubbish. In such a season, therefore, the operation should be deferred until the return of steady, clear weather.

For reasons similar to the above, crowded, close, ill-ventilated, and uncleanly buildings are most dangerous, and animals from such places are best kept for some time in more healthy quarters prior to castration. The vicinity of slaughter houses, rendering works, dissecting rooms, manure manufactories, decomposing dung-heaps, etc., are to be avoided, as calculated to induce unhealthy action and gangrene.

National Live-Stock Journal, Chicago.

Castration of animals.

Age—As regards age, the young usually suffer less than the adult; and the suckling animal has much in its vigor, in its rapid growth, and in the stimulating quality of its animal food to induce a healthy action on the wound, and an early healing. At this early age, too, the testicles are relatively smaller, so that their removal is less likely to produce shock, constitutional reaction, and fever. In colts the danger increases from two years old and upwards, or, in others words, as the organs become more fully developed and the masculine functions become active and come to be a controlling power in the system. Many other conditions usually determine the time (age), as, in horses, the desire for a heavy forehead, a graceful carriage, better vigor and endurance, a delicate, mobile neck, a fine mouth, a long mane, etc., but these are apart from the present question, which is one of safety only.

Health.—Perfect health is essential to safety. Any pre-existing disease is pretty certain to be aggravated by the irritation and fever resulting from the operation; any impairment of the nutritive functions will retard the process of healing in the wound, or induce an unhealthy action resulting in permanent injury or death. If disease germs are in the system, their development is hastened, and the system has to bear the attack of two different troubles combined; or both concentrate their action on the same point, and the extension of the diseased action to the susceptible structures of the abdomen too often precipitates a fatal result. Thus strangles, so common in young horses, causes a low type of inflammation in the groin, with exudations, adhesions, abscesses, and even gangrene. Glanders, too, is attended by the development of the glandular material in the wound and elsewhere, and always by a fatal issue. Scarcely less injurious are influenza, catarrhal fever, bilious fevers, etc., etc., the seeds of which find a fertile field for their development in the system fevered by the operation.

The system most favorable to success is one in high condition, with full, hard muscles; clear, bright, prominent eye; smooth, sleek, healthy coat; pulse full, strong and regular; and spirit lively and ardent. The best condition is, in short, that of the trained animal, in which the wounds heal with that marvelous rapidity which we see in the athlete or race-horse. It is not the fat animal, soft, flabby, and deficient in endurance, but the one that is all muscle and sinew, and that will not tire. Yet, even with this, it is important to give daily exercise after the operation. If kept up in a stall, the animal accustomed to regular exertion quickly becomes plethoric, and thus his great powers of digestion and assimilation conduce to unhealthy rather than healthy action in the wound. If such an animal must stand in the stable after the operation, his fine condition will be rather prejudicial, and should be reduced somewhat by a dose of physic prior to the operation, and a restricted diet after. A very fat animal may be advantageously treated in the same way. The very poor are liable to have the healing process retarded, and to have a low type of inflammation in the wound, with extensive swelling, gangrene, or inflammation of the lining membrane of the abdomen, or, in less redoubtable cases, local abscess, or tumor of the cord. These should have their condition improved before they are castrated.

No male should be castrated until it has been ascertained whether there is any hernia (rupture) into the scrotum. The sack of the scrotum should contain nothing besides the testicle.

Any descent of abdominal organ may be felt at the front and sides of the testicle, and the thickening will be continued upward beside the cord into the abdomen. If pressed, it will return slowly at first, and then suddenly and completely.

Such subjects should be left to the veterinarian for a special operation.—*National Live-Stock Journal, Chicago.*

Heifers from the best milkers.

We think all the best dairymen are agreed in regard to the profit of raising their own cows to supply additions to their herds. Very few have ever selected a valuable herd wholly by purchase. It has been said that if total depravity can ever be alleged against a farmer, it will be found in his representations on the sale of cows. We have often enumerated the important points in favor of home-raised cows; and one of the most important is the opportunity of selecting the heifer calves from the best milkers, both for quantity and quality.

If the dairyman gives no heed to this point, he will perpetuate his worthless cows with his good ones, and thus never improve his dairy herd. A large majority of dairymen have cows in their herds that do not pay their keeping; and as

they do not apply a test to the individual cows, they continue not only to keep them, but to breed from them. This is the most suicidal policy. Although we strongly recommend dairymen to raise their own cows, we are far from advising them to perpetuate their poor cows. It would be even better policy to give them away to a favorite brother-in-law. The heifer calves from only the best cows should be raised, and the weeding out should go on still further. When these heifers come into milk, those that do not come up to the proper standard should be discarded. A careful test should always be made of each cow in the herd, and of each heifer during her first period of milking. If the heifer has the appearance of a well-formed milker, and of having had a good dam, it may not be judicious to pass upon her during her first milking season if her quality is below the standard, for the next season may develop her satisfactorily.

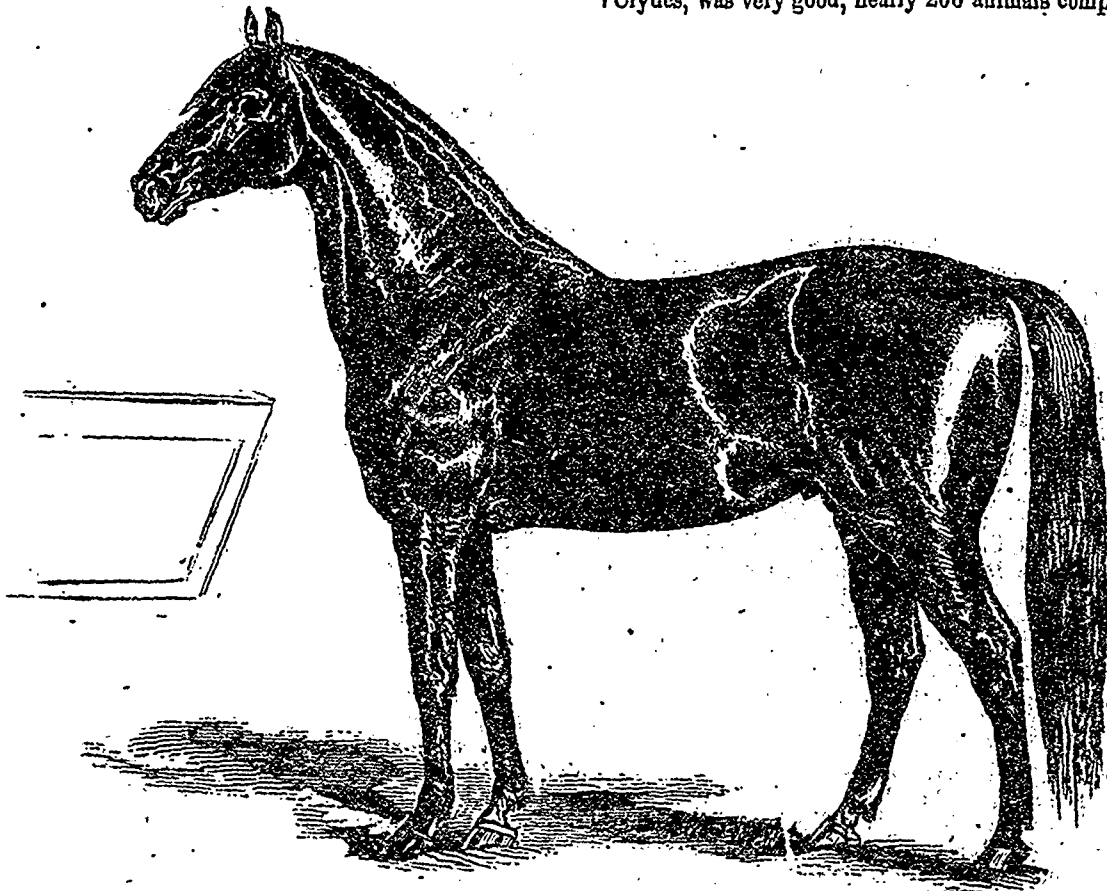
National Live-Stock Journal, Chicago.

hear much less of the unprofitableness of the dairy. Of course great care must be taken to study the wants of these young animals as to food and shelter. Good food and care are necessary to show the capacity of any strain of blood. The best blood will soon deteriorate under unskilful feeding. The heifer calves from the best milkers should be generously fed from the beginning with such food as will grow the frame and muscles: consequently nitrogenous food is most important. Skim milk, oil-meal, wheat bran, oats, barley, and clover, are all good. They must always be fed with more nitrogenous food.—*National Live-Stock Journal, Chicago.*

The Royal Agricultural Society.

The show of this association was held this year at Carlisle, in the North of England, and was not inferior to its predecessors, in spite of the rain.

The display of cart horses, Shire-bred, Suffolks, and Clydes, was very good, nearly 200 animals competing.



Hambletonian Stallion.

Keep the best heifers.

Saving heifer calves only from the best milkers, and then weeding out the poorest of these, will soon lay the foundation for a choice dairy herd. And let us make the further important point, that selecting a pure-bred male from an especially good milking strain, and then selecting the heifer calves from the best milkers, and following up this mode of breeding for even ten years with males from the same strain of blood, the blood of the progeny becomes unified and intensified to a degree of prepotency almost equal to a thoroughbred. The dairyman may then place a strong reliance upon the milking quality of the future progeny. He has thus moulded a breed to suit his own wants. When dairymen shall proceed on this systematic plan of growing their own dairy herds, we shall

Each of these seems to suit the country in which it is used. The Clyde, because, short-legged, active, and hardy, it can accommodate itself to steep hills and cold winds. The Shire-horse, developed by the rich pastures of the fens, is preferred there, because it is adapted to the flats upon which its huge frame can exert itself without tiring, and it furnishes what are required in the heavy wains in towns, also on the level. The clean-legged Suffolk is suited to the heavy clays which cling to feathered legs, and cause great trouble to remove.

Lord Ellesmere and the Manchester Stud Company were first and second in the class of cart-horses not Clydes or Suffolks, beating Mr. Drew's and Mr. Riddell's Scotch breeds. Mr. Drew has sufficiently proved that there are Clydes whose ancestors were English cart horses, and Shire-breds with

Suffolk blood in their veins, so it seems that the classes are ill arranged, and as a middle-sized horse is very much wanted, the sooner a fresh plan is adapted the better will be the chance of a fair competition being begun. There is no such thing as a pure bred cart horse, they are all adaptations: the Shires from the old *black horse*.

Class 3 was a magnificent collection of 19 two-year-olds, and the success of Lord Ellesmere's first and second as much owing to their elephantine stature as to anything else. The two were bred in the Isle of Ely, a fen district which possesses the power of producing size and substance beyond any other in England. The Clydes shown by Messrs. Riddell and Waddell were, it seems, mere cobs by the side of the Woreley two.

The first place in class 4, for pure Olyde aged stallions, was assigned to Mr. Riddell's Darnley. He must perpetuate his own good qualities pretty surely, as his son and two of his daughters held first places, in important and well filled classes.

Mr. Garrett's Cupbearer was first in a class for aged Suffolk Stallions. It was remarked, that if horses were kept to be eaten, the Suffolks would have beaten the whole field. They are famous doers, as a rule, and keep in good condition on little food, but the carcass always seemed to me, even in the old days of Messrs. Crisp's and Bartlett's numerous triumphs, too heavy for their bone. All the Suffolk classes at Carlisle were highly commended.

Among the great Shorthorn breeders, Lord Exeter and the Duke of Devonshire did not show. A comparatively unknown man, Mr. John Vickers, won the chief prize for old bulls, with an animal ugly enough in name, "Duke of Howl John," but in nothing else.

The Prince of Wales' bull is treated in a most contemptuous manner, "too plain a beast to be worth keeping any longer for the showyard"! They don't flatter royalty much at these shows, you see.

In the cow-class &c. Mr. William Langhorn showed 3 animals bred by Mr. Eshton, Northumberland, all by the same sire, all of which were successful. It is something to be proud of, to win with yearling, two-year-old, and cow, at such a meeting; and the owner and the breeder are new men, too.

Lady Wild eyes 15th as a yearling repeated her *coup* at Kilburn as a calf. From an engraving I have received, this exquisite heifer seems to have fulfilled her promise of last year with perfect honesty. I hope to give a copy of the cut in an early number of the Journal for comparison with the one already given.

The Herefords were not numerous, but very fine in quality. The 1st prize adult bull, Grateful, had a hard tussle, for the 4th time, with the 2nd, Mr. Taylor's Thoughtful. The latter beat his opponent three times, but Grateful's amazing flesh and substance carried him through at last. Judging from the photograph, his brisket is almost too large, but his loin, rumps, rounds, and ribs are quite, not almost, faultless: in fact he is as like poor Leonora (Mrs. Edmonds') as if he were her father.

In the Ayrshires, the expectation of large entries by the Duke of Buccleugh seems to have kept many away, and the consequence was that the exhibits were very few, and the great man won all the prizes in the cow and heifer classes. In the Galloways, too, he had it pretty well his own way.

The two classes for dairy cattle were, strange to say, for Darlington fair is a favourite market for the London Milkman, the weakest of the lot. For one class, only 2 pairs were entered; a pair of Shorthorn crosses which, in spite of their immense bags, were disqualified for wrong description; and the other, small Kories, who got the £20: quite as much as they were worth.

Sheep made up a fair show, the native races of the Black-faced, Herdwick, &c., being in their native country. What Mr. Whitfield is going to do with his Black-faces I am curious to know. I wish he would get a flock of Hampshire-downs. I was glad to see my old farm-tutor, William Rigden of Kingston, Sussex, got first prize for a shearling South-down ram (the blue ribbon of the sheep show), beating all the great guns. But after all it was Jonas Webb who made the Southdowns what they now are, and all the glory and honour should be put to his credit.

Shropshires show signs of their derivation, in the mixed character of the wool: uniformity has not yet been gained. A fine, useful breed of sheep, but, as farmer's stock, inferior to the Hampshire.
A. R. J. F.

The English Harvest.

It must be a pleasure to all right-minded people on this side of the ocean, to hear that our brothers in England, whose life as been by no means a pleasant one for the last twelve months, have had a fair share of prosperity fall to them at last. It is rather difficult to find out from farmers in any country how their crops turn out, but judging from a good deal of experience I should say, that when an English tenant-farmer writes to the papers, stating that his crops are up to the average, he will probably reap considerably more than he confesses too. The hay-crop was large, and though in places damaged by the rains, far better than last year. Potatoes are from all sides spoken of as an enormous yield: the disease has appeared, but so it always does at this time of the year. Mangolds are short generally—the frost cut them off in Cheshire and the N. W.; good turnips and swedes will make up for their loss, and the rape in the S. is superb. Butter is plentiful and selling at a fair price, while cheese is worth nearly 30s. per cwt. more than it was this time last year. It is very fortunate it is so, for what with losing all their sheep, and the bad quality of last year's hay starving the cows, the poor cheese-makers of the midland and other districts were pretty nearly ruined.

It is curious enough to see how distasteful it is to the old conservative farmers to accept even the very measures they have been howling for many years, at the hands of a Liberal Ministry. The Malt duty has been the war horse of the Tory party (out of power) for at least 45 years, and now it is done away with, the farmers "don't see it is going to do 'em much good." Farms however are in request again, at much the same rents as before! so the burned *man* won't dread the fire, burn it never so severely. Would any other class of men, brought up to business, as I suppose they consider themselves to be, place themselves unreservedly, capital, brains, and muscles, in the hands of another? Yet this is what the English (not the Scotch) farmer does in three cases out of five! We should like here very well to see the grain and turuips destroyed by game, which game, in many cases, is not even shot by the landlord, but let to some stranger, who sells it to the poulterer, and whose game-keepers drive the farmer wild with their *es, ionnage*, shoot his sheep dogs, and worry his wife's pet cat with their dogs! This seems to be coming to an end, in spite of Lord Elcho. The tenant will, when the new act is passed, have an inalienable right to destroy all ground game on his land, and if, in the future, he suffers from their depredations, he will have only himself to thank.

The Scotch harvest I have no news about, as it had not begun when my papers left England, but, as far as one can judge, the Carse are only moderately well do to, while the turnip soils have a fair prospect before them. There is everywhere an abundance of straw, and the barleys are very heavy.

Curiously enough, there has been no turnip fly anywhere

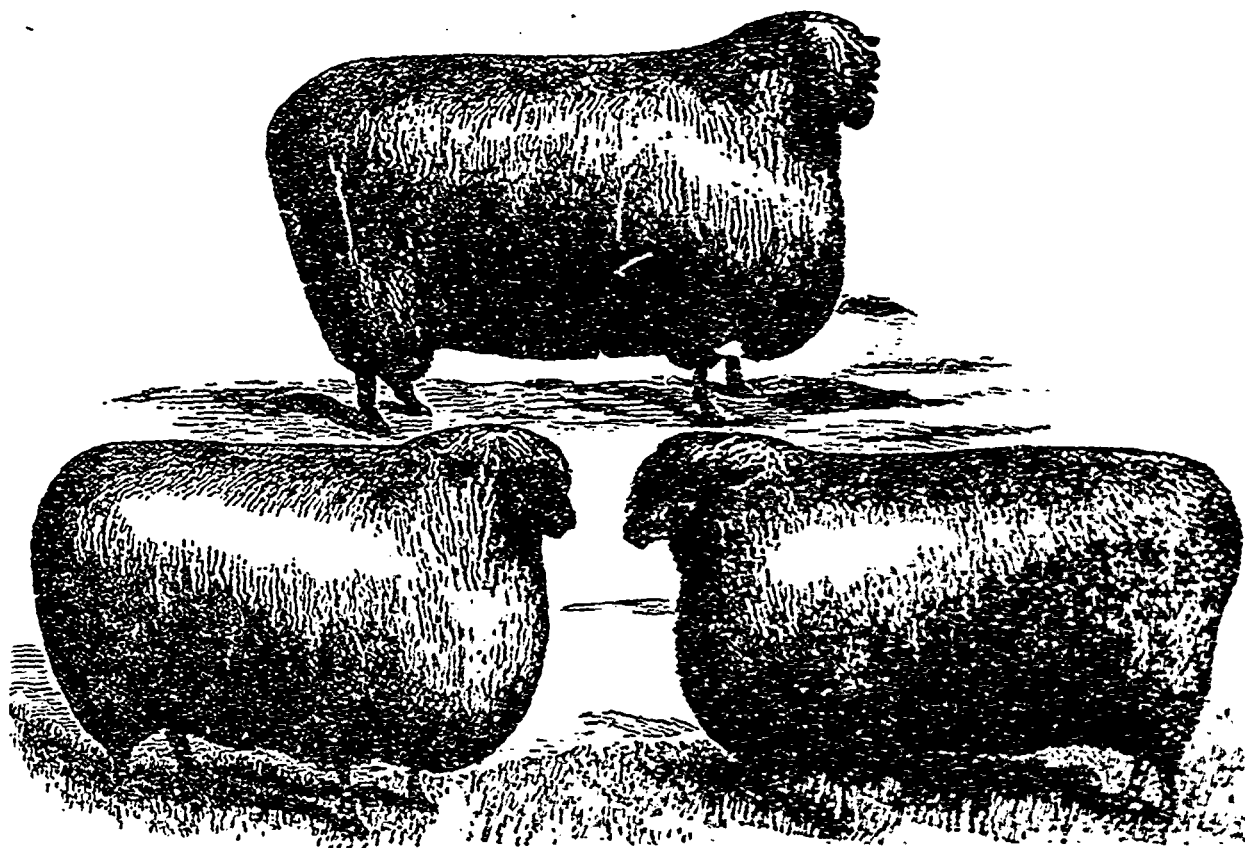
this year, so the hoeing was done early, and, in consequence, the plants all came away well, and will yield an enormous crop. It is when swedes have to be sown two or three times over that the return is small, and, often, white turnips have to take their place. Potatoes are an extraordinary crop at present the ravages of the disease are trifling.

Many of the gardens in Essex, England, are turning out four bushels (56 lbs.) to the square rod, or 640 to the acre, equal to 16 gross tons!

The Scotch, as is well known, trust to nobody but themselves, and are not subject to landlordism, as are their English neighbours, consequently they have not suffered from the times nearly so much.

lurked there unused. The Sawbridgeworth farm should teach us a lesson. v. J. rnal, vol. 1, p. 109.

The English people are always supposed to have good appetites for meat and drink, but at the Alexandra Palace, on the 2nd of August, the Bank holiday, they seem to have outshone themselves. There were consumed 720 dozen of spirits, 470 dozen of wine, 1600 dozen of ale, 750 dozen of stout, 350 barrels of draught ale of 36 gallons each, 103,000 bottles of lemonade, ginger beer, &c., 30,000 cups of tea and coffee, 12,600 one shilling teas, 27,000 lbs. of meat, 60,000 buns and cakes, 12 van-loads of salad, 280 bushels of potatoes, 7,600 dinners, 42,000 loaves of bread, and \$2,200



Coltsfold sheep.

Beef is rather lower in price in both England and Scotland, but mutton keeps up, and is not likely to be any cheaper for some time. The American and Canadian bullock is very nice, but the 9st (72 lbs.) short-woolled down sheep is not, it seems, yet successfully grown in our climate.

The cattle in the G. T. R. cars are terribly crowded. I saw at Pointe Claire, on Thursday, 18 fine beasts, from Toronto, in a space which would only properly accommodate 16! Somebody will suffer in purse from it.

Why on earth cannot a company be started in these moving times to buy some dozen or so farms in the French district near St. Hyacinthe, and cultivate them with a steam plough, drag, &c.? Land that can grow such thistles must have some stamina in it, and it would prove, if successful, that the wheat growing powers of the ancient times are only hidden, and that frost, rain, and air, are the sole things required to unlock the concealed treasures that have so long

worth of fruit! The guests were cleanly in their habits, too, as they used in the washing room 13,000 towels, and 230,000 gallons of water. One hundred and seven thousand people were present.

The new process of saving hay, in England, appears to be perfectly successful. The apparatus, invented by Mr Gibbs, of Gillwell Park, Chingford, Essex, consists of two parts, a frame upon wheels, supporting a sheet iron reciprocating trough, along which the hay is slowly passed, subjected to a powerful current of hot air, and tightened up by rows of revolving forks or pickers; and another piece of machinery on wheels, consisting of a combined furnace and fan. The machine, tried on Lord Ashburton's farm near Alresford, Hampshire, dried 17 waggon loads (22 acres) in 7½ hours. Mr. Fuller, of Corsham, Wilts., made by its use the hay off 117 acres with perfect success, at an expense, including mowing, stacking, &c., of 9 s. 6 d. an acre, the usual contract price being 21 s. to 25 s. In wet seasons, like the present,

the hay is calculated to be worth from £1 to £2 a ton more than that made by the ordinary process. The drier is worked by a portable engine of 4 to 6 horse power.

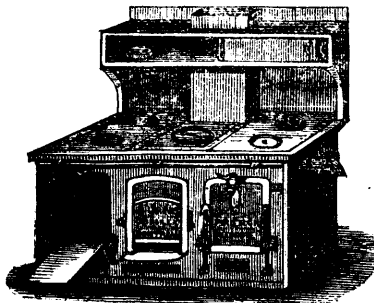
Washed or unwashed Butter.

I beg to call attention to the above excerpt from "The Country Gentleman." It contains in a few words most of those ideas which this journal has been trying to impress on the minds of the butter-makers for the last eighteen months. The principle contained in the passage in italics is, I am convinced, a most important one, all the Norman butter, which brings the highest price in the London market, being treated thus. The buttermilk is drawn off and the butter is gathered (still in the churn) in successive portions of cold water. Mr. Crawford, of St. James' Street, Montreal, expresses himself very forcibly on the merits of the butter-worker mentioned in another part of this number of the Journal as a *non-grinding* implement, as, indeed, from its construction it must be. The old lever-worker will soon be thrown aside by any one who tries the new tool.

New wheat in Mark Lane, London, E. Wheat of the crop 1880 was sold in this market for 56s. the quarter (8 bushels), on the 16th of August.

ARTHUR R. JENNER FUST.

Cheap method of warming Houses. — We have, for several years, employed a peculiarly constructed stove (copied



from the French "economical range"), which warms the whole our house at Varennes with great economy in fuel. The house is built on the banks of the St. Lawrence, and is exposed to the full power of the wind. The same stove serves for cooking, and would answer for a large establishment, such as a College, a

Convent, or an Hotel, &c. The hot water furnished by this stove, by means of pipes surrounding the fire without taking up much room, is sufficient in quantity to supply a pretty well filled stable. The hot water is sent there by a pipe sunk in the ground, and arrives with very little loss of heat.

After several years' trial of this arrangement for combined heating, we think ourselves justified in recommending it very warmly to our friends.

Poultry manure.—An article on this subject in another part of this number of the Journal might be supposed to be aimed at one I wrote in the issue for November last; but it can hardly be possible that my lucubrations have travelled so far as Philadelphia.

The vague idea, not experimentally tested by comparison or analysis, that a substance is valuable as a manure, cannot, nowadays, be allowed much weight. It is precisely the style of notion which is aimed at, in the new regulations in England for teaching the elements of scientific agriculture in the common schools.

I founded my statement as to the value of "Poultry manure," on the analyses of the two wellknown chemists Voelcker and Anderson; the former analytical chemist to the Royal Agricultural Society of England, and the latter occu-

pying the same distinguished post in the laboratory of the Highland Society of Scotland. One principal duty of these gentlemen is, to analyse all manures sent in by members of their respective societies, and to give an estimate of their real value. I am, therefore, inclined to place full confidence in their decisions, and the sooner the farmers and the gardeners of the great state of Pennsylvania make up their minds to employ well skilled chemists to examine their commercial manures, the better it will be for their pockets. I subjoin, for the information of my readers who may not have seen the article on "Poultry manure" in the Journal for November, the three analyses of the mixed manures of hens, geese and ducks, by Professor Anderson, and an analysis of farm-yard dung, (horse, cattle, and pig,) by Professor Voelcker

HEN DUNG.

Water.....	60.88
Organic matter and ammonical salts.....	19.22
Phosphates.....	4.47
Carbonate of lime.....	7.65
Alkaline salts.....	1.09
Sand.....	6.69
	<hr/>
	100.00
Ammonia.....	0.74
Phosphoric acid in alkaline salts equal to.....	.15 Phosphate of lime

GOOSE DUNG.

Water.....	77.08
Organic matter containing ammonia.....	13.44
Phosphates.....	0.89
Alkaline salts.....	2.94
Sand.....	5.65
	<hr/>
	100.00
Ammonia.....	0.67
Phosphoric acid, &c., equal to...	0.12 Phosphate of lime

DUCK DUNG.

Water.....	46.65
Organic matter containing ammonia.....	36.12
Phosphates.....	3.15
Carbonate of lime.....	3.01
Alkaline salts.....	0.32
Sand.....	10.75
	<hr/>
	100.00
Ammonia.....	0.85
Phosphoric acid in alkaline salts.....	a trace

HORSE, CATTLE AND PIG DUNG.

Water.....	66.17
Organic matter.....	28.24
Inorganic matter.....	5.59
	<hr/>
	100.00
Containing ammonia.....	.78
" phosphate of lime } in ash..	12.23
" potash.....	12.14

All these samples were collected in a fresh state, and analysed after being dried at temperature of 212° F.

The "Poultry manure" contains, averaging the three sorts, .7533 of ammonia per cent.; the farm-yard dung contains .7800, i. e. rather more.

Well then may Professor Anderson conclude his report to the Highland Agricultural Society of Scotland: That the 3 kinds of poultry dung, hens', geese' and ducks', hardly, if at all, exceed farm-yard manure in value. I presume no comparison of the quantities of the three valuable constituents of these manures will satisfy the correspondent of the "Poultry Bulletin," but in all kindness, I should recommend him, the next time he encounters an adversary in a fencing match, to keep the button securely fixed on his foil.

As will be seen, there is abundance of potash and phosphoric acid in the farm-yard manure, but the principal and most costly ingredient is the ammonia.

ARTHUR R. JENNER FUST.

Meat, Milk and Butter.

Here is a formula, equally good for fattening, or milk producing: 6 bushels of linseed at \$1.....\$6.00
 10 " of pease at 86cts..... 8.60
 150 bushels of Swedes at 5 cts..... 7.50
 \$22.10

On this food, the fattening animal will make, on an average, two pounds a day, equal to 300 lbs. during the season of 150 days, which at 8 cts. a pound, will amount to \$24: the dung therefore will be the only profit.

On the other hand, take a cow newly calved. On rich food like the above, she will give lots of milk, say 10 quarts a day, or a pound of butter. Well made fresh butter in winter is always worth from 35c. to 40c. a lb. in Montreal, say 25c. equal to \$37: balance in favour of milk \$13, besides 1350 quarts of skim-milk, which at ½ cent a quart equals \$6.75, total \$20.05 in favour of milk. I have over-rated the yield of beef, 1½ lbs. a day would be more like it, and the price is put too high. I have under-rated the milk, as a decent cow on such food would give 14 quarts a day.

Will some one try it this winter? If the turnips are given immediately after milking, and a small piece of saltpetre put into the milking pail, I guarantee that the milk shall have no taste of the vegetable.

Swedes can be grown for 5c. a bushel,—don't doubt it—a fair crop, here, is 15 tons to the acre—Swedes weigh about 43 to 45 lbs. a bushel, equal to 750 bushels per acre—\$37.50. q. e. Mr. Cochrane's usual crop is 1000 bushels, per acre.

The linseed, as I have mentioned before, must be crushed, boiled, and poured over the pease-meal and plenty of straw-chaff, no hay. If there is no crusher handy, the linseed may be mixed with oats and ground at the mill, in which case a smaller proportion of pease will be necessary. In this case of course the mixture of oats and linseed must not be boiled, but mixed with boiling water only. Straw ad libitum should be given in the racks, or cut into chaff, in the mangers. I regret to say that my plan for the establishment of a dairy, in active operation, at the September show at Mile End, fell to the ground, for the want of sufficient funds to carry it out. If any subscribers to the Journal would like to see the process of making butter Devonshire fashion, I should be happy to pay them a visit, my travelling expenses of course being guaranteed. The great point in it seems to me, that the heat carries off all bad flavours, and yet, strange to say, leaves all the good flavour behind, and, owing to the fact that albumen coagulates at about 180° F, the whole of the casein is removed by the subsequent washing; the butter separating into small particles renders it impossible that any buttermilk should

remain; so that there exists but a very little *nidus* of evil-designing enemies to spoil the article.

It is evident, from the prices obtained, that there is something left in our butter that spoils it very readily. Is it not worth while, then, to try every reasonable means of getting rid of this substance, whatever it is? What says Professor Baldwin, in his report on the butter and cheese at Kilburn? "We (the British) are beaten by the butter makers of these countries, Denmark and Normandy, through, not by natural advantages, but by the sheer force of knowledge and skill. If we accept this truth, and apply the energy which has enabled us to place ourselves at the head of all countries in many branches of industry, we shall soon hold our own of Denmark dairy husbandry; but as long as we allow the notion to prevail that our rivals possess certain advantages which do not exist, we shall make little or no progress. About 25 years ago the dairy practices of Denmark were rather more backward than our own. Since then the Royal Agricultural Society of Denmark, the Government, and private individuals have cooperated in effecting a reform. Within the short space of 12 years they have increased the exports from 8,000,000 lbs. to about 26,000,000 lbs." Recollect, please, that this butter is not sold for cart-grease, but fetches the highest price in the English market! A. R. J. F.

A good mixture for permanent grass, whether for pasture or mowing.

	lbs.
Meadow Foxtail.....	2
Cocksfoot (Orchard grass).....	3
Hard Fescue.....	1
Meadow ".....	2
Tall ".....	1
Pacey's perennial Rye grass.....	8
Crested Dogtail.....	1
Poa nemoralis.....	2
Do trivialis.....	2
Timothy.....	7
Trefoil (Hop-clover, trifolium procumbens).....	2
Rib grass.....	1
Trifolium perenne.....	4
Dutch or White Clover.....	3
Alsike.....	2
	41

And 3 lbs. per acre of Rape or Coleseed.

Grapes at St. Hilaire.

The vines are all planted in rows, three feet apart (i. e. the rows three feet from each other, and the vines also three feet from each other) this allows the plough to be readily passed between the rows in the autumn; the autumn being chosen for this work for two reasons, first stirring up the earth, and secondly covering the vines for the winter, an indispensable precaution which ought never to be omitted if the vines are to be preserved, and besides, this manner of protection is so easy that it should not be neglected.

After cutting the vines to about two feet (to prevent them being trampled upon by the horses in ploughing), I pass the plough once on each side of the row, which throws up the earth, thus covering the vine and shielding it from the winter frosts, in this manner they are also protected from the late spring frosts, provided they are not uncovered too soon. Last winter none of mine suffered in the least. These vines I intend propping up with poles (sticks between 3 and 4 feet high) as is generally done in the middle and north of France.

This method is in very general use, principally in cold countries, for this reason; the vine stock must be kept as near the ground as possible, for the higher it is, the slower will it be in coming to maturity; this is done by plucking up all the suckers growing from the root, when the stump is vigorous and not too high, otherwise these must be preserved by dressing them as a new plant or growth, and the following year sacrifice the old stump.

First pruning.—The great fault of those starting such plantations is the wishing to “run before they can crawl,” or in other words, going too fast. In the face of rapid productions like those of the vine and of the long vine branches which shoot out, one is tempted to let bear the kinds one has chosen, at once, and if only in the second year, we see grapes on the vine stock, we decide not to cut down a plant which already presents so good a show. This is, I repeat, a great fault in the formation of the vine as well as of all fruit trees.

Before all, hardy plants must be set, and as the sap is always present in the highest parts of plants, therefore the lowest positions must be strongly set in order to prevent them languishing at a later period.

(Signed) T. HANNON.

We should be curious to know what varieties Mr. Hannon grows as all the American varieties we know would be entirely too close at the distance named. Our vines are grown ten feet apart each way.—E. A. B.

FALL WHEAT IN QUEBEC.

Attracted by a desire to see for myself the wonderful fall wheat-crop I had heard of on Captain Campbell's farm at St. Hilaire, I started for that place on the 25th of August by the early train from Montreal. The crop, I found on my arrival, had been threshed, but there was the straw to measure and the grain to weigh. The former was 6 feet 4 inches in length, and the wheat passed 64½ lbs. per imperial bushel! The quantity of land sown was about ¼ of an acre, and the produce 11½ bushels, *Canadian measure*, from which I deducted 3 lbs. per bushel, as hand-striking is always that much above the real measure; thus, according to the legal weight of 60 lbs. to the bushel, there were 12 bushels, 3 pecks, 3 pounds, equal to 38 bushels, 1 peck, 2 gallons, and 1½ lbs. per acre! Some of the ears were 7 inches long, and so great had been the *tillering* that one stool, the produce of one seed, had 31 straws—this, reckoning 36 grains to the ear, would give as the yield 1,116 for one seed!!

And it is no new thing here, this fall wheat sowing. From the earliest times of the late honoured Major's occupation, it has been the invariable practice to sow a small piece every year. A sheltered spot is chosen, the land carefully prepared, drainage is well looked after, and in spring the harrows and roller do their work. The wheat is sold, for seed, at \$2 a bushel, to Mr. Evans, of Montreal.

The whole of Captain Campbell's farm is in good condition, the fences well kept up, and the stock look healthy and thriving. The cows, principally Ayrshires, are, as a herd, only beginning to make a show. They have been selected with considerable judgment, and the bull, a purchase at Mr. Rodden's sale, judging from the calves of his get dropped this spring, is likely to turn out an improved lot of young ones.

The dairy is the perfection of neatness and cleanliness. Whose churn do you use? was my first question. The reply “we don't use any, for more than 40 years we have made all our butter *Devonshire fashion!* We find we make more, it keeps better, is finer flavoured (and quite as well coloured as any one can desire) than if made in the ordinary way, to say nothing of the saving of time and trouble by doing away with

the old laborious process of churning.” The pans of milk are placed on the stove, after 15 hours standing, and heated until the first bubble forms, when they are removed, cooled, and the cream taken off. The butter comes, after 2 minutes stirring. Surely, before long, more farmers will be induced to try this simple plan. I confess, I cling to the idea of heating in a water-bath, in preference to the stove-plate; but Captain Campbell assures me there is never any taste of burning (I have found it sometimes), and, if so, there is no advantage to be gained by the certainly more expensive plan. (1).

Some Lucerne, sown near the house, finds itself, I fear, in too heavy a soil to do much good. It requires a light warm subsoil, and thorough preparation, which this piece had evidently not received.

The farm horses are a useful lot of medium sized animals; one of them is as perfect a specimen of complete congenital malformation as ever I saw. His hind legs have every defect, except cap ped hocks and thorough-pin, that horseflesh is heir to; and yet he does his work to perfection, and though 22 years old, has never been sick or sorry until lately!

Two nice level hunters, (a dark bay and a chestnut, the former a charmingly fascinating animal), ought to carry Captain Campbell well to the Montreal Foxhounds, of which he is Master. There are about 210 acres under cultivation, and the pastures are in good order, well divided, and with plenty of change, forming an agreeable contrast to those thistle-covered *pacages* I saw on each side of the railroad on my journey.

In the cars, on his way to Mr. Gibb's sale, at Compton, I found Mr. Jardyne, an Ayrshire breeder, and extensive hop-grower, from Hamilton, Ont. He told me that, in his neighbourhood, farmers were sowing Clover alone instead of mixing it with Timothy, breaking it up the second year for wheat. The crop of hops will not be large, but the quality probably fine—the fly had been troublesome. The barley crop is both large and good, so beer-drinkers will not suffer much loss by a rise of price in hops.

Hampshire Downs.

I have been preaching a good deal lately on the text of *Hampshire Downs*, because I feel sure that no breed of sheep is so well suited to our land and climate. They are very hardy, accustomed to pick about for their living, prolific, mature at an early age (the lambs at the last Smithfield Club show weighed 33 lbs. the quarter, at 9 months old), and clip from 7 lbs. to 8 lbs. of wool. They come to much greater weight than any other Down breed. The late Major Campbell, his son told me the other day, found the Southdowns too delicate and impatient of cold.

The Agricultural Gazette speaking of the Carlisle show of the R. A. S., says: “The Hampshire breed is yearly gaining ground, and will, we are convinced, become more highly appreciated. It is in the hands of a very business-like class of men, who keep them for profit, and because they believe no other race of sheep will pay so well for their keep. No breed produces lambs which come quicker to maturity, and no race is better calculated for crossing with long-woolled ewes, so as to produce a strong half-bred teg (hogget). The Hampshire combines the quality of the Southdown with the size of the Shropshire-down, which indeed he excels. “The Hampshire ram lamb sales indicate a rising market for this excellent breed. Sixty-five guineas for a lamb is a long price, especially when given by a genuine tenant-farmer, and yet

(1) The pans are the old shallow pans, 15 inches wide—I prefer the deeper pans used in the county of Devon.—A. R. J. F.

this was paid by Mr. Dibbin on Monday last (August 2nd) at Mr. James Read's sale at Homington, near Salisbury. (1)

The lamb was cheap at the price, for who can calculate the effect of such a ram when allied to ewes of the character of those possessed by his purchaser? We are pleased to acknowledge the merits of Hampshire-downs. They have all the solid qualities of Southdowns, with grander size and as early maturity. It is not too much to assume that such a ram lamb as Mr. Dibbin bought for 65 gs. would beget lambs which, as wethers, would average as many shillings at seven months old." The Hampshires equal the Southdowns in the London market as regards price per pound.

Beaconsfield Vineyard.

The well known natural politeness of the French character induces one to suppose that their enthusiastic admiration of any object, whether of nature or of art, requires a large deduction to be made before it can be taken as the genuine impulse of feeling.

This is what struck me when, on Thursday, the 26th. of August, I heard the warm expressions of delight and astonishment, from the lips of a large party of French-Canadian farmers, at the crop of grapes in Mr. Menzies' vineyard at Pointe Claire. But when I afterwards walked through the alleys and saw the ripe bunches—yes, really ripe—I felt that no discount was required, the crop and the cultivation meriting all the praise they received.

The bunches are as numerous as last year, but not so large. It occurred to me that the system of pruning had been altered, not for the better, and it is probably owing to this that the inferiority of size is due. The flavour is very different, the coarse taste has, in great measure, disappeared; this Mr. Menzies attributes to his not having dressed the vines this year with blood and bone manure. It may be so, but I take it the summer sun has something to do with it; last year was certainly not a propitious season for this fruit, and it was hardly fair to judge by its produce of the qualities of a new sort of grape.

There are about 30 acres of vines under cultivation, chiefly of the *Beaconsfield* sort, but among the others the most promising are the *Crevelling* which, though ripening three weeks after the other, is hardy and productive.

The *Lady* and the *Martha*, very much alike in character of vine, are delicate and unpromising. *Concord* is hopeless. *Rogers' 44* and *Salem* are late in coming into bearing, but look thrifty. The finest bunch in the whole yard was on a vine of *Rogers' 4*. *Moore's Early*, of which a cut was given in the Journal for April, seems scanty after 4 years cultivation, but the vine is hardy, and the berries very large. The *Courtland*, a seedling, is apparently the same as the *Beaconsfield*.

A few gallons of wine were made last season. The maker did not know much about it, consequently colour was wanting. The fermentation was carried too far, instead of being arrested by the exhibition of sulphur. The flavour was pleasing and delicate, rather more like a *Hermitage* than a *Claret*, but I should fancy in such a year as 1879 the addition of sugar was imperatively demanded. I shall be curious to taste the wine made with fruit of 1880.

A. R. J. F.

(2) Twelve ram-lambs were let at Homington, the average being £34.12 a piece. At Dudmaston Lodge one Shropshire ram let for the sum of £168! but it was an exceptional case, as the 22 rams disposed of only averaged £29.9.—A. R. J. F.

POULTRY DEPARTMENT.

Under the direction of Dr. Andres, Beaver Hall, Montreal

Packing Eggs.

There is a mode of packing eggs by which they may be safely carried any distance, and over rough roads, without any damage. And there is another mode by which half of them may be very easily broken. The secret lies in solid packing, with an elastic material between the layers. We have watched many barrels of eggs opened without a single broken one in them; and many badly packed, which we would not have handled had they been given to us for nothing. The proper mode of packing, either in barrels, boxes, or baskets is to place first a layer of long hay or straw three inches thick in the bottom. On this scatter an inch in depth of cut hay or straw, or chaff or oats, or whatever packing is used; then place the eggs on their sides, not touching each other, and when the layer is complete, spread over them and between them the cut stuff or chaff two inches deep. Press this down gently with a piece of board, and put another layer of eggs, taking care that they do not touch each other or the sides of the barrel or box; again fill up the layer of packing, and press down as before. When the barrel is full, place a long layer of hay or straw on the top in such quantity that the lid must be pressed down with considerable force to go into its place. The eggs will then be solidly packed and will not become loose, and will stand considerable jarring without damage; but if they were loosely packed, each little jar would cause them to strike against each other, thereby breaking the shells.—*Ex.*

Poultry Manure.

It is scarcely to be believed that a man who thinks he has a right to be heard in public, should question the value of Poultry manure. In our part of the country such a man would be regarded with suspicion, and on this point at least, few would take stock in his opinions. Here, in South-eastern Pennsylvania, we claim to know something about agriculture and fertilizers. Among us every farmer and gardener places a high estimation on the value of poultry manure. This county produces annually two million dollars worth of poultry and eggs, and our people are in a position to know something of the value of the droppings of their fowls. The manure is carefully saved and used. It is known to be rich in ammonia (what percentage I am unable to say) but it is the general practice to reduce its strength before applying it, as otherwise, it injures and even destroys the tender germs of sprouting plants, by coming into contact with them in an undiluted state.

Peruvian guano used to be strong enough to act in this way, but there is found to be little danger in its use now. It is diluted enough before the farmer gets it.

The commercial value of poultry manure is not equal to its intrinsic value when compared with the commercial fertilizers. Our farmers and gardeners are willing to pay \$20 per ton for it, and buy all they can get at that price. It is really worth more, and but comparatively little is sold. Most people who have a garden, or a truck patch, prefer to use it to selling at that price. The writer sometimes has a small surplus, and finds no difficulty in disposing of it at current prices. This, then, is a fair estimate of the value of poultry manure in Bucks County, Pa.

Poultry Bulletin.

When to advertise.

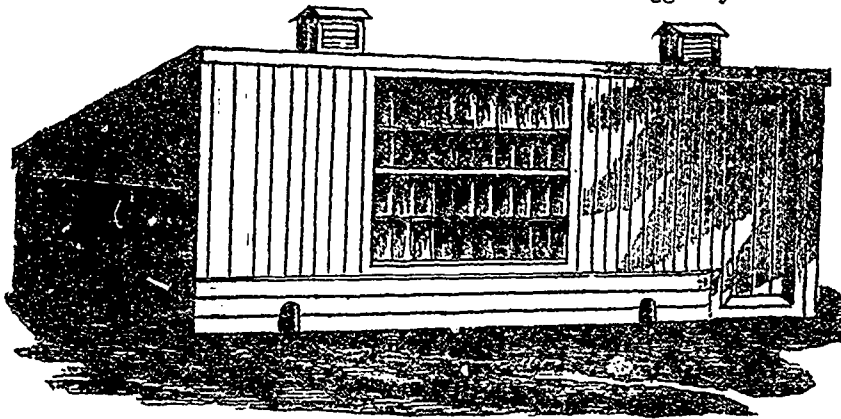
There is a very foolish idea in the minds of some fanciers, that advertising after the spring season is of little use.

We know, and we speak advisedly, when we say that such an idea is erroneous in theory, false in conception, and impolitic as a rule. Hundreds, and thousands, constantly read the cards in the advertising columns, whether at the time they are, or not, in need of eggs or birds. In many cases a would be purchaser has not a reliable hen to sit on valuable eggs in early spring, and concludes to buy a pair or a trio in the fall.

Steady advertising is what pays. The advertiser gets the full benefit of low rates; his card always attracts the attention of buyers; it serves as a reference to his reliability and popularity, his circulars are sent for, and, if the prices are satisfactory, orders come for eggs or fowls.

Am. Poultry Journal.

We endorse every word of the above. S. J. ANDRES.



A Convenient Poultry-House.

The illustration of the above in this number will at once strike the eye as being neat and tasteful, as also practical. The facilities for light and ventilation are ample, and the construction is so simple that almost anybody can build it. We leave the interior arrangements to the fancy and judgment of the builder.

MOULTING.

Moult is a natural process of annual occurrence; and, though it can scarcely be called a disease, yet it is necessary to treat it as if it were such, from the effects produced by it. It not unfrequently happens that young fowls do not pass the season of moulting safely, but sicken and die. Chickens of the latest broods are most liable to bad effects, because the season of moulting comes to them so late, when the weather is most unfavorable. The summer moult is usually gradual, but few feathers falling at a time, and these being at once replaced. On the contrary, when the moult happens in autumn, the feathers fall faster, and are not so speedily replaced. The consequence is, that the fowl is in a degree naked, and suffers from the necessary exposure.

It is the remark of Dr. Bechstein, that, in a state of nature, moulting occurs to wild birds precisely when their food is most plenty; hence nature points out that the fowl should, during that period, be furnished with an extra supply of food.

After the third year, it has been observed that fowls begin to moult later every succeeding year, so that it is frequently as late as January before the older fowls come into full feather; and the weather being then cold, they are not in a laying

state till the end of March, or later. The time of moulting continues, according to the age and health of the fowls, and also with reference to mild or cold weather, from six weeks to three months. "I think I have observed," says Dickson "in some instances of late hatching, that the process is favorable to moulting.—*Dr. Bennett.*

Egg-Bound Fowls.

How can they be relieved?—X. M. Ans.—Take a feather and strip it until near the tip, and then dip it in sweet oil, and let it remain until it becomes thoroughly saturated, then pass the feather up the egg passage till it meets the egg, which you find will relieve the hen at once, and enable her to proceed with her duties; if she experiences any further difficulty, repeat the operation, getting the feather well filled with oil whenever you make an application. Do not attempt to help nature, in the way of pressure, for in that case the egg may be broken and prove fatal to the hen. After you have made the application as directed, let Nature take her course, and all will be right.—*Ez.*

About this season the hired man sets a steel trap in a hen's nest and covers it slightly with hay, leaving an egg on it for bait, the whole being designed to capture a weasel, and the farmer's wife wants an egg in a hurry, and sends her husband to get one; and he goes out and sees the above-mentioned egg and grabs it, and then there's the very old boy to pay.

Remedy for Canker.

I noticed an inquiry from a correspondent as to what ailed his game fowls. Although not a breeder of games I have had some experience with the disease he describes. I think it is not roup, though generally accompanied by it. It is probably canker, sometimes called canker pox. It develops in different forms, the mildest forms appearing in small white blisters on comb, lobes, and face. The more serious phase is the formation of putrid, cheesy matter in the throat and mouth, and it takes prompt and radical treatment to save the birds.

I had some twenty fowls attacked, and lost several before I found a remedy. After trying a number of advertised remedies I came to the conclusion that it was a blood disease, and the cause must be removed first. I then treated them in the following manner: place affected birds apart from flocks, and in dry warm quarters; then remove the fungus from the throat and mouth, with a small, thin stick; swab thoroughly with a solution of salt and vinegar twice a day; at night give a pill of sulphur and cream tartar as large as a hazel-nut. Continue until cured, feeding light, and avoiding corn.

Where the disease only shows itself outwardly, wash affected parts with a strong solution of carbolic acid, and use internal treatment as above. It is no child's play to handle this disease, and requires prompt and constant attendance to eradicate it from the yards.

POTTAGE.

Indiana Farmer.

A man's excuse for stealing a pair of chickens was, that while at work he hung his coat near the coop, and on going for it he found the chickens roosted on the same. He hadn't the heart to wake them up, he said, so he wound his coat around them without waking them and carried them off. His defence was ingenious, but he was sent up for three months all the same.—*Waterbury American.*

Raising chicks.

When chicks are growing, any check will be of permanent injury. Four good meals must be regularly given, one of which, at least should be of soft food mixed nice and dry, and, if the place admits of it, scattered about so as to allow them room to pick it up clean; but if not, it should then be placed in vessels, kept clean and free from sourness.

Milk, if it can be had, may still be given them, even up to the age of six months if the range is good; but if kept in confinement, not more than three months; in such cases, it is too much for the sluggish digestive organs. At the age of from ten to twelve weeks the cockerels ought to be separated from the pullets, and kept by themselves.

They never grow so large when the sexes are kept together, besides which it saves trouble, and the cockerels are not so ready to fight among themselves as if with the pullets. In all the large breeds there will be little difficulty in picking out the cockerels, the comb and spur of which will be a pretty sure indication of their sex. In cases where a good run is impossible, and the chickens are kept in small yards, these should be regularly swept out, and occasionally sprinkled with carbonate of lime, which kills all offensive smell.

Fanciers Journal.

The Secret of Haymaking.

The time to cut meadow-grass is when the complexion of the field begins to wear a brownish tinge. At this stage the bulk of the grasses are flowering, and some of the earliest ones have gone to seed. Very heavy crops should be cut earlier than this, particularly sewage grass, or they will become laid and rotten in the bottom. Clover should be cut when the majority of the heads are in blossom, for if it stands till it has done flowering the woody fibre increases and the nutritive qualities decrease in proportion. All grass and clover should, in fact, be cut a little under rather than over ripe, as at this stage they contain a considerable quantity of sugar, gum, mucilage, albuminous and other soluble compounds, which are all liable to be washed out by repeated or long continued showers of rain, and particularly so after the hay is partly made. While the grass is still newly cut and fresh, a coating of waxy or oily matter is found on the epidermis, giving it a waterproof covering and protecting it from injury by rain; this protection remains so long as the grass is fresh and unbruised, but when it has been turned and knocked about repeatedly the fibres are more or less bruised or broken, the cell-walls are lacerated, and the juices containing the soluble constituents begin to ooze out and escape, unless the drying proceeds pretty rapidly, sealing them up in the stems and leaves. If rain falls at this period the drying is checked, the escape of the compounds is promoted, and fermentation sets in, during which the two most valuable properties of the hay are destroyed, viz., albumen and sugar. So in showery weather it is advisable to leave the grass or half-made hay quite alone; for stirring them during rain, and when there is no certainty of getting them dried and made up into cocks in good condition, does much more harm than good. To make up into cocks hay that is wet with rain-water is the surest way to spoil the hay, and until the rain ceases and the wet can be got out of it it is best to leave it quite alone. The stirring bruises the hay all the more—a result that is easily attained when it is full of rain-water—and cocking it up wet only promotes fermentation, so that no good whatever, but great harm, comes of messing about among it in wet weather. There is no good whatever in stirring hay about when even the atmosphere is such that no drying will take place. It is not enough that it is not raining and that the hay has no rain-water in it, for if the atmosphere be damp no moisture will evaporate from the hay, consequently no drying is going on, and the hay is far better

left alone without the bruising it gets in stirring and knocking about. It is sun, or wind, or dry air, or all these together that do the drying; and, however valuable it may be with them, stirring is absolutely worthless without them.

"Dairy Farming," by Professor Sheldon.

VENTILATION.

We are now in the midst of our season, where the fowls and chicks will suffer most severely if confined at night in close unventilated fowl houses. A good plan would be to let them roost under sheds, simply lathed in to keep out cats, foxes, weasels and other vermin. A well trained rat terrier is a useful adjunct to have about the poultry house. If you prefer to keep in close quarters, have ventilators put at the peak of the house, in the shape of a square cupola with slated windows, and an opening at the floor covered with wire netting, some distance from the perches, so that there may be a constant current of air passing through without creating a strong draught upon the roosting places. If the draught annoys them they get out of the way of it if possible, and if unable to do so they will find other roosting places.

S. J. A.

Ayrshires at Auction.—John L. Gibb, Esquire, the well known breeder of Ayrshires and other stock at Compton, had an auction sale on the 26th of August last, as advertised in these columns. Four Ayrshire bulls, eighteen females of various age, and quite a number of Berkshire pigs, were sold at satisfactory prices. The largest purchasers of Ayrshires were Mr. Jardyne of Hamilton, O., Mr. Ball of Stanstead, and Mr. Ernest Bennon of New Liverpool.

We regret to hear that, owing to the very busy season and also to the fact that the advertisements were sent so late to our Journal, very few Canadians attended the sale.

Besides the breeding of Ayrshires and Berkshires of which Mr. Gibb has made a speciality for many years back, he informs us that he is about to add a small herd of Short-horns (Durhams) and also one of Herefords to his already large stock. We wish him every success in his new ventures.

BUTTER-WORKER.

Mr. Crawford, of St. James' street and Chambly, informs me that, after a fair trial of the *Butter-worker*, figured and described in our June number, he has come to the conclusion that its work is as nearly perfection as anything of the sort can be. The butter, Mr. Crawford says, is left without a drop of butter-milk in it, and, at the same time, there is no appearance of *salviness*, the grain being perfectly preserved. To use Mr. Crawford's own words, "I would not be without it on any account." The American butter-worker, heretofore in use in Mr. Crawford's dairy, is thrown aside for this new-fangled invention. It is made of hard wood.

ARTHUR R. JENNER FUST.

CORRESPONDENCE.

Toronto, August 9th. 1880.

To the Editor of the Montreal "*Illustrated Journal of Agriculture*."

DEAR SIR.

In your June number appears a "Report of the Goderich Horticultural Society" in which, under the head of "Tree Brokers," we are treated with great injustice. In the interests of fair play, we claim space to give the assertion, there made against us as nurserymen, a flat contradiction!

This report says we "belong to the class of tree-dealers, or brokers, and should be frowned down by all true Horticulturalists." We declare this to be false, in every particular, and cannot understand, unless on the ground of petty spite or jealousy on the part of their informants, why any one should thus spread



broadcast a statement calculated to injure our business, and destroy the confidence of fruit growers in our *honesty* and trustworthiness.

The *fact* is we are *not* brokers, but veritable nurserymen, and for 10 years past, have done by far the *largest business*, in our *line*, in the *Dominion*.

We claim to do a legitimate, fair and extensive trade, and will stand by our reputation for honesty and fair dealing with *any* of our *competitors*, whom we should consider it beneath us to oppose in any such underhand manner as this. We ask favours from none, but we insist upon not being misrepresented publicly in this fashion.

We have seen Mr. McAllan, the president of this society, who expresses his regret to us personally, and will shortly publish a letter making every amend possible.

That he may be able to speak from actual knowledge, we have arranged to defray his expenses to Rochester, and have requested him to make our nurseries a visit, which he will do an early date, thus affording him every facility for arriving at the *actual facts*, which are, that we are among the *largest growers* of fruit trees, vines, and plants, on this continent, and have established for ourselves a name for honorable dealing in which we have just cause to feel pride.

Respectfully Yours,
CHASE BROS. & BOWMAN.

Messrs. CHASE BROTHERS and BOWMAN'S Nurseries.

Our June number contained an official report of the Guelph Horticultural Society, containing the following paragraph.....

"Messrs. Chase Brothers and Bowman, whose Canadian head-quarters are at Toronto, belong to the class of "dealers" or "brokers," we are informed, and should be frowned down by all true horticulturists."

We find on enquiry that this statement is by no means

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MONTREAL VETERINARY COLLEGE, ESTABLISHED in 1866, by the Council of Agriculture, P. Que.—In connection with the medical Faculty of McGill University.

The course embraces Botany, Chemistry, Physiology, *Materia Medica*, Anatomy, Veterinary Medicine, and Surgery; it extends over three sessions of six months each.

Lectures commence on the 1st October and continue till the end of March.

The Council of Agriculture offer twenty free Bursaries, 7 for the English department and 13 for the French; these are intended for young men from country districts only. Applicants must be recommended by the Agricultural Society of their district, and pass the matriculation examination.

Prospectuses giving full particulars for intending students will be sent free, on application to the Principal. D. McEACHRAN, F. R. C. V. S., No. 6 Union Avenue

GRAND DOMINION EXHIBITION.—TO BE held on the Provincial Exhibition Grounds, Mount Royal Avenue, Montreal. OPENS TUESDAY, SEPT. 14th. CLOSERS FRIDAY, SEPT. 24th. at 2 P.M.

\$20,000 OFFERED IN PREMIUMS.

Entries must be made with the Secretaries in Montreal, on or before the undermentioned dates, viz: Horses, Cattle, Sheep, Swine, Poultry, Agricultural Implements and Dairy products, to Saturday, September 4th Fine Arts, Manufactures, Implements, Machinery, Stoves, &c., Saturday, August 28th. Prize Lists and Blank Forms of entry can be obtained of the Secretaries. For further particulars apply to S. C. STEVENSON, Sec. C. of Arts & Mfs. Or to GEO. LECLERE, Sec. C. of Agriculture.

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CANADIAN PROVISION PACKING Co., OFFICE and works, 30, Henderson Street (Palais), Quebec. Preserved Meats, Fish, Vegetables and Fruits. Wholesale only. Awards: FIRST PRIZE and DIPLOMA, Quebec Provincial Exhibition, 1877. THREE FIRST PRIZES, TWO MEDALS and a DIPLOMA, at the Grand Dominion Exhibition, Ottawa, 1879.

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PROVINCIAL HORTICULTURAL EXHIBITION, under the patronage of His Excellency the Governor General, and H. R. H. the Princess Louise, The Exhibition of the Montreal Horticultural Society and Fruit Growers Association of the Province of Quebec, will take place in Montreal, on Tuesday, Wednesday, Thursday, and Friday,—the 14th, 15th, 16th and 17th September, (during the first week of the Dominion Exhibition). Intending exhibitors must make their entries in writing with the Secretary not later than Thursday, the 9th September next. Special provision has been made whereby any person residing outside the Island of Montreal, but in the Province of Quebec, may become members of the Association and compete for prizes at any exhibition held by the Society, on payment of an annual fee of one dollar. Members will receive a copy of the Society's Report, the Agricultural Journal, and a ticket of admission to the Exhibition free; no additional charge for entries. The Exhibition will open to the public on Tuesday, the 14th September, at 7 P.M., and remain open the three following days and night till 10 o'clock.

For prize list and further information, apply to HENRY S. EVANS, Sec. to Exh. 93, McGill Street, Montreal. 1976, P. O. Box.

correct. The Messrs. Chase Brothers and Bowman have large nurseries at Rochester, and devote themselves solely to the cultivation of fruit trees suited to this climate. We have heard before, and very favourably, of Messrs. Chase Brothers and Bowman, but as the name of the Toronto firm is rather different we applied to Mr. Vick, Seedsman, of Rochester, and he informs us that Mr. Bowman is the manager of the Toronto business of the firm of Chase Brothers, Rochester. Mr. Vick speaks most favourably of the establishment.

We must therefore regret the action of the Guelph Horticultural Society, and trust that it will make amends, as we have done, for the injury inflicted on this highly respectable firm.

Butter factories.—We visited a few days ago the model butter factory erected at *St. Basile le Grand* (Co. of Chambly) last spring, under the direction of A. A. Bennett, Esquire. Mr. Bennett may be considered one of the best butter makers in America, as he has taken the grand sweepstake prize at the International dairy fair, held in New-York in December 1878. We shall not attempt a description of this factory. To those who take a deep interest in the question we would say: visit Mr. Bennett's factory.—The quantity of milk per pound of butter has averaged 24½ lbs. in May and June, and 25½ in July and August. The price obtained so far has been 27 cents a lb. The milk is brought to the factory, is cooled and kept 36 hours before skimming. We have tasted the butter which is very good; but it could be much improved where the pastures richer and the weeds less numerous. But that is more than Mr. Bennett can obtain from the farmers in his district in his first year's operations.—We shall in a few days visit Mr. Barré's factory at L'Avenir (South Durham) where the cream only is collected, the milk being cooled and skimmed on each farm, on the Danish system.

THE HILLS STOCK FARM, FRELIGHTSBURG, P. Q.—Thoroughbred Ayrshires, South-Down sheep, Berkshire pigs. Catalogues on application to N. S. WHITNEY, Montreal, P. Q.

FRUIT GROWERS ASSOC. OF ABBOTTSFORD EXHIBITION FRIDAY 24 SEPT.

Prize list open to all and no competition fees to those 20 miles distant from Abbotsford. Many of the new grapes and promised by their originators and the collection of out-door grapes is likely to surpass any yet seen in P. Q. For prize list etc., apply to CHS. GIBB, Sec. Treas.

FRENCH ECONOMICAL RANGES.—THE most convenient ranges for cooking, combining great economy in fuel with perfect work and great durability. They are absolutely perfect in every respect. We can arrange them to warm, by means of hot water, all the rooms of a large house at once, as well as performing all the requirements of the kitchen. We have our furnaces, at Montreal, in the St. Lawrence Hall, Ottawa Hotel, City Club, the Convent of Hochelaga, Good Shepherd, St. Brigitte and in the houses of Messrs. Alfred Pansmeau, Ed. Barnard, (Director of Agriculture) Varennes, and hundreds of others who allow us to refer to them for confirmation of the above statements.

For more ample information, apply to the undersigned. BURNS & CORMLEY, 676, Craig St., Montreal.

The Illustrated Journal of Agriculture is sent *gratuitously*, by the Department of Agriculture and Public Works for the Province of Quebec, to every English speaking member of a County, Agricultural or Horticultural, society in this Province; French speaking members being entitled to receive the *Journal d'Agriculture Illustré*. The two journals will be entirely distinct publications. Any person, not a member of such society, may obtain either Journal, on payment of one dollar per annum, strictly in advance.

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