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THE

CANADIAN AGRICULTURIST,

AND

Journal of the Board of Agriculture

OF

UPPER CANADA.

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VOL. XI.

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No. 1.

THE DOMESTICATED ANIMALS

In the system of mixed husbandry, which is the one most generally suited to this portion of the great North American continent, the breeding and feeding of live stock must necessarily occupy a prominent position. Things pertaining to agriculture, as well as other interests, are now very different in Canada to what they were some dozen or twenty years ago; a large consuming population has arisen in our increasing towns and cities; a regular demand has sprung up for our surplus produce and cattle in the eastern States, so that a constant enhanced money value has been imparted both to our grain and live stock, whether in a lean or fattened condition. To meet this demand, our farmers must not be content to rear animals that require five or six years to attain maturity; but must seek such as possess the qualities of great weight and early ripening; that is to say an aptitude to grow and fatten rapidly, without consuming an enormous quantity of food. These remarks apply alike to cattle, sheep and swine; and we think that a series of popular articles on the domesticated Animals of the farm, compiled from authentic sources and some considerable personal observation and experience, cannot fail to be, to some extent, both interesting and useful to many of our readers. We purpose beginning with Horned Cattle, then proceeding to Sheep and Pigs; tracing their history, varieties, characteristics, and adaptation to varying physical conditions of climate, soil, &c.; and we shall probably finish this series of papers by treating that noble and useful animal, the Horse, in a similar manner.

THE SHORT-HORNED BREED.

We begin with the Short-horned, not because we consider this breed as superior to all others in its adaptation to the almost endless variety which obtains on the surface of the earth as respects soil, pasturage, elevation, &c., but because in the most advanced agricultural portions of the old world, as well as of the new, its pre-eminence is now almost universally accorded. In a few of the western counties of England, some eminent breeders seem to have considered the Hereford cattle to be at the head of our improved races, and cer-

tainly they have succeeded in producing very fine specimens, adapted to a much wider range, perhaps, than some authorities seem disposed to admit. But it is certain that for general purposes and conditions, public opinion has unmistakably pronounced in favor of the Short-horns. In proof of this we need only state that it is only within the last two or three years that any printed record of the pedigree of the various families of the Herefords and Devons has been published, while we have already twelve massive volumes of Coates's world-renowned Herd Book, in which the pedigrees of the Short-horned breed have been most carefully and clearly stated; shewing how jealously the purity of its blood has been watched and transmitted, of which there is nothing to compare in the history and progress of any other. Besides, the fourth volume of the American Short-horn Herd Book, under the able editorship of Lewis F. Allen, Esq., is in the course of preparation; and in our own Canadian Stock Register, compiled in the office and by authority of the Board of Agriculture of Upper Canada, the full pedigrees of nearly four hundred Short-horns are recorded; animals that now are, or recently have been, owned by farmers in this section of the Province. The Short-horns, however, did not attain to this proud pre-eminence without opposition or rivalry, since their history shows that they had to make headway against the long-cherished prejudices and imaginary reputation of the great body of breeders. It is remarkable that in Scotland, where they were at first absolutely despised, they have for a long time been highly cherished, and from the rich Lothians to the extreme north, may now be found some of the best herds of the United Kingdom.

This valuable breed of cattle has received at various times different designations. It was originally called "Dutch," "Teeswater," and finally "Short-horned Durham;" not that it originated in that county, as the term might lead us to suppose, for it is certain that the breed existed for, perhaps, centuries, in Lincolnshire, Yorkshire, Northumberland and the Borders. There is strong evidence for the belief that the breed originated from stock originally imported into England from the opposite coasts of Holland, the cows of which had long been celebrated for their large size, abundance of milk, and in many instances remarkable fattening qualities. More or less of these cattle were to be found from Holderness, through the plains of Yorkshire, the luxuriant pastures of Teesdale, even to the south-eastern portion of Scotland. In so extensive and diversified a tract of country considerable differences would doubtless exist, even upon the supposition that they were all descended from a pure and uniform race. Authorities most worthy of credence, if not perfectly agreed as to the exact variety from which our present race of Short-horns has been derived, testify to the fact that in general the original cattle were of great size, and celebrated for their yield of the richest milk. They are said to have had the head thick, the neck coarse, the shoulders large, the sides flat, the forequarters defective, the coarse parts bulky, the fine small, the skin thin and the constitution somewhat delicate. In the course of time, by mixing with the native breeds they became more hardy, and by judicious selections improved in symmetry and fattening properties.

About the middle of the last century the cattle indigenous to the rich and picturesque valley of the Tees, a river which separates the celebrated breeding counties of Durham and York, were found to have a much improved character, and to possess in common, many of the characteristics of a distinct breed. They had in fact most of the traits, although in general but imperfectly developed, of our present improved Short-horns. This breed had been improved by importations from Holland, Holstein and Jutland; being red or mixed with white, and occasionally roan; they had a mellow touch, good hair,

light offal, particularly wide carcasses, and remarkably deep fore-quarters, affording excellent meat, and the cows abundance of milk. The shortening of their horns appears to have been a gradual process. It is stated on reliable authority, that St. Quintin of Scampster, and the Debinsons, effected considerable change, and that we are greatly indebted to those gentlemen for the present "Improved Short-horned Breed." This success naturally induced others to follow up the enterprise, and to effect still further improvements; among whom may be mentioned Mr. Millbank, of Barmingham, of whose success an idea may be formed from his having bred an ox, which, at five years old, weighed when slaughtered, the four quarters, 150 stones. of 14 lbs to the stone, and the tallow 16 stones. Sir James Pennyan, a large land owner in the counties of York, Durham and Northumberland, procured stock from Sir William Quintin's herd, and presented six cows and a bull to Mr. George Snowdon of Hurworthy, his tenant; and from these proceedings very valuable results were obtained. This breed, now designated the Teeswater, after the name of the district in which many of the best specimens had been reared,—or simply the Shorthorn, had been gradually improving till we come down to the times of Messrs. Charles and Robert Colling, of Darlington, who, with great painstaking, and admirable judgment and skill, succeeded in effecting such further improvements as to give this breed a unity of character, and most of the characteristics by which it has become subsequently distinguished. The famous bull "Comet," was bred by Mr. Charles Colling, and sold for one thousand guineas!

"These individuals had become considerable farmers in Yorkshire soon after the year 1770. Mr. Charles Colling, the younger brother, is justly regarded as the founder of the new breed, although his elder brother followed him in his course of enterprise and improvement, step by step. Charles Colling cannot indeed, be compared with Bakewell for boldness and originality of design; but he was greatly more fortunate in the selection of a basis for his breed. Colling, like Bakewell, seems to have regarded size in his animals as a quality secondary and subordinate to those which he wished to communicate, and to have directed almost exclusive attention to beauty and utility of form, and development of properties of early maturity and facility of fattening. Having by selection and the skilful conjunction of the best individuals for breeding, become possessed of animals with the properties sought for, he continued to breed from his own stock, disregarding affinities of blood, by which means he gave to it the necessary permanence of characters, and that delicacy of form which this system of breeding tends to communicate. He adopted the practice of hiring out his bulls, by which means he realised a competent fortune, and extended the influence of his stock to the districts around him. (Low.) "His rule of proceeding," remarks the Rev. Mr. Berry, "was, disregarding popular prejudices, he adhered to a system which he conceived to be correct, and awaited patiently for the result. His constant aim was to combine the greatest inclination to fatten with the most correct form; and the numerous bulls which he let at unprecedented prices, together with the items of his sale catalogue, furnish ample proof that he did not proceed far as a breeder before public opinion was most decidedly with him."

We possess but very scanty information respecting the particulars of the system which Colling pursued, since he studiously avoided, both in public and private, throwing any light upon the subject. A very singular fact relating to the origin of his stock is well worth repeating. It is generally believed that Colling acquired the bull, which may be said to have originated his celebrated herd in the following accidental manner. A calf belonging to a poor man who grazed his cow on the highways, attracted the attention of Mr. Robt.

Colling who was induced to purchase it, but the calf was shortly afterwards transferred to his brother Charles, who appears to have been particularly struck with its symmetry and promising characteristics. He likewise acquired the mother of the calf; but after being transferred to richer pasture she became so fat as to be incapable of breeding. The calf exhibited a similar aptitude to fatten, and as a bull his services were effective only for a short time. This bull was named *Hubback*, and may be considered as the father of our present race of improved Durhams or Shorthorns. He is said to have been below the ordinary size of the then Peeswater cattle, but that his touch and points were of an unprecedented order. From this time Colling continued to improve his herd rapidly, and soon produced a number of celebrated bulls, as Petrarch, Bolingbroke, Favorite, Comet, &c., which soon began to spread this improved breed, so that as early as the year of 1800, it was sought after and appreciated by farmers residing in various districts to which it had hitherto been unknown. This result was doubtless considerably influenced by the following circumstance. A remarkably fine bred animal, named the *Durham Oxc.* a son of Colling's bull "Favorite," and a common cow, was calved in 1796. At five years old he was sold for £140, being of immense size and remarkably fat. In five weeks after he was sold to Mr. John Day for £250, and it is said that in two months after that he could have been sold for £2000! For six years Mr. Day travelled through England and Scotland with him on exhibition, but in 1807 the animal accidentally had his thigh broken, and was obliged to be slaughtered. His carcase weighed, notwithstanding what he must have lost during a period of eight weeks' suffering, 165 stone, 12 lb.; tallow, 11 stone, 2 lb.; hide 10 stone, 2 lb. At ten years old he weighed 270 stone, and it is said that if he had been kept quiet and regularly fed, that he would have weighed more at six or seven years old than he did at ten.

Colling continued to follow Bakewell's system of "breeding in and in," till he appears to have reached the limit of refinement, and his stock began to exhibit those signs of weakness of constitution, which sooner or later are sure to accompany a continued and forced intermixture of blood in a limited number of individuals nearly related. From this undesirable result he was probably led to cross with the Highland and Galloway breeds, an experiment which proved successful only with the latter. He put a Galloway cow of red color, to one of his best bulls, a grandson of Bolingbroke. "The produce was a bull-calf, which in due time was conjoined with a fine Short-horned cow, Johanna. The produce of this union was likewise a bull-calf, which, in the fitting time, was put to another fine short-horned cow, Lady, from whom has descended a family termed, in reproach, the Alloy. The family of the Alloy, however, has proved not inferior to those of what are termed pure blood. At the sale of Mr. Colling's stock, which took place in 1810, this cow, Lady, with her descendants, sold at enormous prices, shewing that in the estimation of the public, the Galloway cross had not impaired the excellence of the pure stock. Thus it appears, that by a single cross with another race, and then by breeding back again to the superior one, no injury was sustained; nay, a fresh infusion of vigour was probably made into the parent stock. Similar results are common in the breeding of horses, dogs, and other animals. The proceeding, in the case of Colling, was nothing more than a rash experiment, the favorable result of which should not diminish the caution of breeders, in preserving the purity of a family of animals whose characters have been established." (Low.)

The whole of Colling's unrivalled herd was sold in the year 1810; and it will not be uninteresting to the reader of the present day to be put into possession of the aggregate result, with a few of the most prominent items of this

celebrated sale. The number of cows was seventeen, which brought a total sum of 2669 guineas. Countess fetched the highest price, viz: 400 guineas; she was out of Lady, by Cupid, and nine years old. *Eleven Bulls* fetched a total of 2249 guineas; the highest being Comet, six years of age, got by Favorite out of Phoenix, and sold for 1000 guineas! *Seven Bull Calves*, under one year old, realised 665 guineas; Cecil, out of Peerless, by Comet, obtained 170 guineas; George, out of Lady, by the same bull, 130 guineas, and Young Favorite, out of Countess, got by the same, 140 guineas! *Seven Heifers*, all got by Comet, obtained 693 guineas: Young Countess out of Countess, 206 guineas; and Young Duchess out of Dam by Favorite, 153 guineas! *Five Heifer Calves* under one year old, sold for 306 guineas; Lucille, out of Laura by Comet, 106 guineas; making a grand total for 47 head of cattle, of £7126 sterling!

Mr. Robert Colling was likewise a distinguished improver of the Shorthorns, although his stock did not altogether equal the celebrity of his brother's. His herd was all sold in 1818; when, as appears by the catalogue, 34 cows sold for 4144 guineas; 17 *Heifers*, for 1287; 5 *Bulls* for 713; 4 *Bull-calves* for 713; being 61 head of cattle for 7484 guineas!

This variety of the Teeswater, or as it has since been called, the Improved Shorthorn, was for some time principally confined to the county of Durham, where there were several distinguished breeders, as Mr. Hill, Mr. Maynard, Messrs. Charges, Mr. Mason, Col. O'Callagan, Mr. Crofton, and others, to whom their successors are under great obligation. "Gradually," observes Mr. Dickson, "the Shorthorns spread over all parts of the United Kingdom, and among parts of the continent of America and Australia. The breeders in Lincolnshire and Yorkshire, have never, in the opinion of the best judges, been able to raise animals equal to those produced in the county of Durham; the cattle being generally wanting in symmetry. The principal breeders in Northumberland, about fifty years ago, were the Culleys, the Comptons, the Smiths, the Greys, the Thomsons, the Jobsons, Hunt, Curry, and others; while north of the Tweed, was the late Mr. Robertson of Ladykirk, who procured his first stock from Mr. Colling. The writer having had frequent opportunities of inspecting Mr. Robertson's stock, is enabled unhesitatingly to state that the animals composing it were unrivalled. Mr. Robertson kept about thirty breeding cows, all of them perfect models. In color they were generally roan, light grey, and white, or rather cream color, and occasionally bright blood-red. The nose and mouth, and also about the eyes, were cream colored; eyes full, lively and prominent; forehead broad, and from eyes to nose rather long; muzzle fine, ears thin, horns short and white; neck well set on, rising gently from the shoulders, and fine, but not thin; neck, veins, and breast full and prominent; shoulders full at the top, and moderately so down to the fore-arm, and full of muscle; small, clean, flat bone below the knee; fore-legs straight and moderately wide; the fore-end open, wide, and prominent; the crop full and round and wide behind the shoulders, or girthing-place; ribs round and well arched; back and loins full and broad; hook wide and long to rump-bone; well-filled from the loins to the setting-on of the tail, which is almost in a straight line with the shoulders; tail broad and full of hair, dropping outside of the hooks; the hips or buttocks well filled on the outer and inner sides; hind legs wide and well set, and full of muscle above the knee; belly straight, the whole carcase being nearly cylindrical; hide rather thick, soft and mellow, with a fine touch; hair woolly. Such were the forms and qualifications of the Ladykirk Shorthorns. At one time Shorthorns were preferred with thin hides, and thin silky hair; but these being found unable to withstand the cold, Mr. Robertson and other breeders selected those with soft but thicker hides, and thick-set

woolly hair; indispensable requisites to protect the animals from cold. Mr. Robertson's stock possessed great aptitude to fatten, and fed to great weights at an early age,—his two-year-olds weighing from 70 to 80 stones each, and his three-year-olds weighing upwards of 100 stones. The stock arrived at maturity at two years old. Mr. Robertson followed the practice of breeding "in and in," as it is termed; the reason alleged being the fear of deterioration by introducing other blood. His cattle, in consequence, showed a delicacy and weakness of constitution, which, no doubt, arose from this cause. The system is justified by many breeders, but condemned by a large number. A slight acquaintance with animal physiology would, however, convince breeders generally of its bad effects. Mr. Robertson's stock were, notwithstanding, in great request, and commanded high prices. From the minute descriptions above given of their conformation and characteristics, the reader will be able to form a full and correct idea of what are even now regarded as the principal points of this celebrated breed.

From the district of the Tees the Shorthorns soon extended southward thro' Yorkshire into Lincolnshire, and westward into Leicester and Northampton, as well as into Lancashire, Cumberland and other counties. At an early period the breed spread through Durham and Northumberland into the valley of the Tweed, and gradually made its way amidst much prejudice and opposition into the southern and eastern Lowlands of Scotland. Ultimately it diffused itself over considerable portions of country till it reached the extreme north, where, as it has been before observed, are now to be found some of the very best herds of Shorthorns in the British Islands.

(To be continued.)

Agricultural Intelligence.

THE SMITHFIELD CLUB FAT CATTLE SHOW.

This Annual Exhibition of Fat Cattle, Sheep and Swine, which has been established in London for about half a century, was held in the usual place in Baker Street, during the second week of December. Of late years the implement department which formed no part of the original design of the show,—has greatly increased, so as to render it often difficult to inspect satisfactorily, either the animals or the machines. Although the Society has changed the locality for holding its exhibitions two or three times since its commencement, with a view of meeting its increasing wants, yet it appears that its present accommodation is getting every year more and more inadequate, and a committee has been appointed to make enquiries with a view to obtain a suitable place, having larger accommodations than the one now occupied. The Crystal Palace at Sydenham, we perceive, has been spoken of.

The late show appears to have been upon the whole quite satisfactory, although in some of the departments of horn cattle there might be traces of a little falling off compared with one or two of the most successful recent years. We condense the following statements from a very elaborate report, evidently got up with great judgment and industry, in the *Mark Lane Express*, a paper occupying the foremost position as an authority in all matters pertaining to agriculture in England. From the subjoined table our readers will be able to judge accurately of the total number of cattle of the different breeds for the last four years.

	1855.	1856.	1857	1858.
Devons.....	17	21	32	28
Herefords.....	20	21	36	26
Shorthorns.....	40	42	43	42
Scotch, Irish, and Welsh.....	16	13	18	12
Other pure breeds.....	3	18	22	26
Cross-bred	7	12	8	23
Extra.....	9	13	17	14
Total.....	112	140	176	171

“That is, as compared with last year, we have a decrease of Devons, Herefords, Shorthorns, Scotch, Irish, and Welsh, and Extra stock, the principal deficiency being with the Herefords and Irish. Other pure breeds show an increase, and the Cross-bred are three times as many as they were last year. The Shorthorns keep pretty closely to their usual force. The Show, altogether, is full as usual, without being in excess.—Taken as a whole, the cattle classes cannot be ranked higher, if as high, in merit as we have known them, there being too many second-rate and third-rate animals—forming a disproportionately large back-ground, setting off the few marvels of excellence which are conspicuous in the Show. One feature, however, is more observable than ever—and this must gratify our humane and economical friends who are opposed to the pampering and bloating of beef into unwholesome fat meat, bad for graziers and butchers, good only for cooks—this is the presence of well-bred, well-fed meat, with an almost complete absence of unsightly lumps of fat on backs and rumps. In a word, it is, in this sense, the “evenest” show we have ever seen.”

The *Devons* mustered in good force, and had some good representatives. Prince Albert’s prize Steer is represented as a handsome animal, “symmetrical, with flesh well laid on, and capital in flank and thigh.” In *Herefords*, the Show was excellent. Mr. Naylor’s Birmingham Gold Medal Hereford Ox was not permitted to compete at Smithfield, which is described “as the grandest Hereford of the year, or indeed of several years; a beast that would of itself form a magnificent point of attraction.”—Mr. Stratton’s Gold Medal Steer is described “as a perfect model of a *Shorthorn*, surpassing all competitors. Mr. Stratton is an eminent breeder of this world-renowned class of cattle, and the gold medal heifer got by one of his bulls, is said “to be a study of what a young Shorn-horn ought to be.” There were a few good specimens of *Sussex*—well fated and good handlers, but in general their backs are too narrow. No Irish breeds were entered, and the *Welsh* were thinly represented. Some very good Scotch horned and Scotch polled cattle, and a Galloway Ox of great depth of frame.

“The Cross or Mixed Breed classes are of great interest and importance, as though the perpetuation of a good first cross is a difficulty not easily overcome, the production of first-rate feeders by crossing breeds judiciously is of great and growing value. Besides, it is sometimes a matter of curiosity to find how experiments answer with the most diverse of breeds, the results of extraordinary mixtures being sometimes highly instructive if not profitable. Messrs Martin showed a good Aberdeen and Shorthorn—Mr. Knowles, a very nice thing as a steer, the produce of a Shorthorn and Scotch horned. Mr. Knowles’ Shorthorn and Aberdeen heifer, red, with horns, is very well formed—straight, deep, and uncommonly nice meat. The Duke of Beaufort’s Shorthorn and Gloucester very good indeed, handsome, and with a full outspringing chine. Mr. Farquharson’s Devon and Highland is a happy hit; and the Earl of Darnley has done well with a Hereford and Shorthorn cross, bred by Mr. Griffin, the character of both breeds being, however, clearly discernible. The heifer class comprises some very nice things indeed, especially Mr. Holland’s beautifully fed heifer, and Mr. Druce’s compact white heifer.”

SHEEP.

The number of sheep for the last three years is as under:

	1856.	1857.	1858.
Long-wools.....	40	35	37
Cross-breeds.....	18	32	32
Short-wools.....	35	62	60
Total.....	96	129	129

The *Leicesters* were a better show than had been previously produced; combining a superiority of form and feeding quality, which makes a profitable sort. The *Cotswolds* were wonderfully large and splendid sheep, with fine wool, dark faces, and capital mutton. The show of *Short-wools* was very fine, the Duke of Richmond, Mr. Rigden, and Lord Walsingham being at the head; Mr. Jonas Webb not exhibiting. "Beautiful as these *Downs* really are, the art of 'trimming a sheep,' has here also, in too many instances, been closely studied."

"The important classes of Cross-bred sheep are a striking feature in the Show. Mr. Overman's prize Southdown and Leicester wethers are very perfect in form, the character of the three sheep very equal, and the handling uncommonly fine. Mr. White's, Mr. Hobbs', Mr. Howard's, Mr. Morland's, and Mr. Twitchell's are unusually good.— Why do exhibitors persist in clipping so as to present a straight flat back to the eye, and rumps, flanks, plaits, bosoms apparently full and expanded, when the hand instantly detects the falsity of the outward show, and reveals the abominable attempt to thus gloss over a defective form? And why do judges award honors to such sheep as they have done in every class? A sheep unfairly shorn, and a pig unduly old, ought alike to be disqualified by the authorities. In the next class (for wethers not exceeding 220lbs. live weight) we must make the same complaint; and we would not give a prize to a pen of sheep, no matter how good their mutton, or how handsome their "looks," if there were such gross trimming and shaping the animals with the shears. Mr. Overman's magnificent sheep are in splendid condition, are wonderfully handsome, have rare fleeces, and are also properly shorn. Mr. Morland's are extremely compact, pretty, and with plenty of wool all over; but several pens in this class, some of them carrying off honors, are evidently the result of good breeding, feeding, and trimming combined. The Extra Stock Class is very fine. Mr. Twitchell's silver medal wether has extraordinary symmetry, great breadth of loin and chine, and full plaits; very fine in bone, and beautiful, but somewhat too tucked up. Mr. Howard's Oxfordshire Down wether is a beauty, possessing very great merit. Mr. Overman's wether is extraordinary for size, width, and substance. Mr. Hine's Down-and-Leicester wether has considerable length of face, and a rare chine and plaits. The Earl of Leicester's wether, and Mr. White's handsome Cotswold-and-Sussex Down ewe, are very properly "commended."

PIGS.

The number of entries is :

1856	1857	1858
38	59	57

The show of swine is described as being extraordinarily good, not only containing a large number of unusually fine animals, but the general merits of others being beyond what is usual on these occasions. For early maturity, and striking development of form and flesh, very fat and beautifully fine, were distinguishing qualities. The Yorkshire, Dorsets, Improved Bedfordshire, Improved Suffolks and Berkshire may be said to comprise the more valuable and prominent breeds.

THE IMPLEMENT DEPARTMENT.

It should be borne in mind that no prizes are awarded to implements and machines at the Smithfield Show, notwithstanding manufacturers are found to embrace with avidity the opportunity of exhibiting their productions. This department has been rapidly increasing for several years, and forms a most interesting and instructive portion of the Show. The space at present allotted is not sufficient for the purpose. Most of the machines are only within reach of the eye, and many upon the floor are so cramped and wedged in amongst others as to be quite immovable. Some, again, are to be judged of only by sections and models from the sheer impossibility of finding room for them. The state of things is unsatisfactory, and especially so when the fault admits of a remedy, that must suggest itself to everybody. Surely in London, the centre of civilization, where the possible seems to have no limit, and the spirit of enterprise is perpetually urging men to the gratification of wants that are daily increasing in magnitude and grandeur—surely in London, the capital of a country that has exalted agriculture as a grand particular star amongst the sciences, we should possess a better theatre in which to display the very implements to which we are mainly indebted for our proud supremacy.

The comfort of the public and the interests of the Club would be very much consulted by the establishment of five shilling and half-crown days, as well as the one

shilling days now in vogue. This arrangement would please those who could afford the extra fee, and present no hardship to such as could not.

There were several articles of new invention exhibited. Among the novelties deserving notice, may be mentioned *Child's Grain Separator*, an American invention, much approved; and also *Allen's Grass Mower*, and *Samuelson's Reaper*, with self-acting rake. These machines are manufactured by Messrs. Burgess and Key, and are thus described:

"Allen's patent American grassmower; a machine which has, it appears, been tested in this country, and found to work well. A little more experience of its adaptability to varieties of crops is necessary before we can report upon it with confidence. The horses walk beside the standing grass, drawing the machine after them. The cutting arm, furnished with knives moving in the same manner as Burgess and Key's reaper, is thrown out from one side to a distance of three feet, terminated by a sort of wooden breast, which preserves the grass in falling over the cutters from being deposited amongst the standing crop. This arm is firmly attached to the frame of the machine, and a spring extends from the rear side of the frame to a smaller travelling wheel, which preserves the position of the whole machine, and keeps the cutting arm close to the ground, while allowing all irregularities of surface to be allowed for without the attention of the man who drives. The scheme is ingenious; but one would expect either the horse power employed to be less or the breadth of swathe greater. The price is £30. The well-known reaper belonging to this firm was also here, with screw platform for side delivery in swathe, and conical dividing roller. Then we have Child's patent grain separator, a machine which introduces a new principle, "weighs every kernel of grain separately," and manages to despatch 50 quarters per day, roughing, dressing, and blowing at one operation in a very perfect manner. The novelty introduced in the machine consists in the fact that the fans revolve in an enclosed drum creating a vacuum in the chamber behind. The air rushing to supply this vacuum, enters only at one point, and meeting there with the dressed grain in its final descent from the riddles, carries it up in a very surprising manner, and holds it suspended in a chamber the same width as the back of the machine. If good and true the grain undergoes the test and falls to the heap to be raked away to the bushel; but if light and chaffy, it is drawn upwards into a larger space where the current is less severe, and drops into the place allotted to it. The air then passes out behind, catching the grain as it falls from the hopper, carrying with it almost every vestige of chaff with which it is there mixed. The price of this machine is £20. We hear it is much used by malsters and millers; and we think a simple machine without so much riddle surface might now be constructed at less expense to finish the grain as it comes in its nearly prepared condition from our combined thrashing and dressing machines. Certainly this is the most novel piece of machinery in the whole show, embodying as it does a totally new principle. There was a cheap, and what seemed to be a likely potato plough, also an American implement, as well as the celebrated American churn."

We are glad to find that Mr. Romaine showed a beautiful model of his locomotive steam digging machine, which attracted much attention. Models of Fowler's celebrated prize steam plough, or Boydell traction engine; and some others were shown.

"Steam-culture is evidently uppermost not only in the minds of the farmers, but also in the schemings of implement makers. As you walk through the galleries, one tells you of a new plan of affixing a windlass to an engine, another gives you a peep at a new form of winding apparatus, another communicates a secret as to an altogether new kind of cultivator, and everybody is talking of experience with the steam-plough, and wondering at the convincing evidence which has lately been published.

Great things will undoubtedly flow from this year's general muster, and throngs of chiefs' in agricultural mechanics, to inspect, consult, advise, and sow and pick up ideas. Our part as the farmer's remembrancer will be to dwell more fully as occasion serves, upon the special improvements that have been brought to light during the show."

Since compiling the above we have received in a communication from a correspondent, dated London, December 21st, the following notice of the Smithfield Show:—

* * * "With respect to the recent Smithfield Exhibition, I regret that temporary indisposition prevented me visiting it as I could have wished. I only spent a few hours one afternoon, but did not much enjoy it, as the building was fearfully crowded and very warm, arising from the large number of animals, and the countless

number of spectators. Nevertheless, I was highly delighted with the general appearance of the Stock,—the high-breeding and great fattening aptitude of which appeared to me—witnessing such scenes for the first time—most extraordinary. I have seen some well fattened cattle at exhibitions in Canada, and the annual display of meat at Christmas by the Toronto butchers, I have often looked upon with admiration.—But here the fat cattle, sheep and pigs defy description, although it is stated that animals generally at this exhibition, have not been fed to such an extreme degree as on previous occasions. * * * This Show may be said to have been generally successful, both as regards the amount and quality of the stock, and the number of visitors; the latter have been computed at upwards of one hundred thousand! But unfortunately there have been many mishaps to the stock on exhibition, and these misfortunes are thought to have exceeded any previous year. The Heifer which obtained the first prize and the Gold and Silver Medals, as the best specimen in any of the classes, had to be removed from the yard as she had got the distemper, and several others were affected in the same way. This epidemic among cattle is of a very serious character, widely spread in this and other European countries, and not unfrequently proving fatal. The handsomest pig of the gold medal pen, unfortunately expired, as did also several others of its fraternity. Extreme fatness, heat and disquietude, were, most probably, the chief causes of these diseases. His Royal Highness the Prince Consort, was an exhibitor in several of the classes, and carried off two first prizes for his Devon Steers, which were indeed handsome, and evenly fattened animals; one of which I learnt was sold to a butcher for £50. In the Hereford class the Prince was defeated, and had to content himself with only a “commendation;” although his ox was really an ornament to the Show, and fetched £45, which was the sum obtained for Mr. Heath’s celebrated first prize steer of this excellent breed. Steers above three years old obtained from £45 to £53 each, while one belonging to the Prince was disposed of for £60. The Shorthorns mustered in their usually large number, and for capacity and early maturity, combined with symmetry of form, stood unrivalled. Mr. Stratton’s splendid steer, under three years, won the first prize and gold medal, and was sold for £70; and a second prize Heifer of this breed fetched £50. The Stock seemed to have been sent from all parts of the Kingdom; the West and North Highland breeds, although rough and hardy in appearance, were very fine animals, well fattened, and yielding the finest of meat. These Scotch polled breeds obtained very high prices; Mr. Heath’s ox, (the same, I think, about which there has recently been so much controversy as to the purity of its breeding) sold for £60, and the second prize went to an animal from Aberdeen, which obtained £47. The Duke of Richmond’s Southdown Sheep, from Sussex, particularly took my attention; they obtained the first prize and gold and silver medals; such animals I never before saw; and I might say the same of other breeds of sheep, and the whole of the swinish multitude. * *

The Royal Dublin Society occupied a prominent stand, and exhibited a very fine collection of roots and vegetables, which, notwithstanding several other collections belonging to the most eminent Scotch and English Seedsmen was unsurpassed. Some of the mangel wurtzel weighed from 34 lbs. to 40 lbs. each; white Belgium carrots, and hollow crowned Jersey parsnips, upwards of 5 lbs. each; and Drumhead cabbages from 56 to 60 lbs each. Skirving’s purple top, and Con’s Imperial Swede turnips, pure and most symmetrically grown, would average over 8 lbs. each, although they had been nearly a month out of the ground. The soil and climate of Ireland must be highly congenial to these crops, which form the farmer’s sheet-anchor, and they evince no ordinary skill and perseverance in the art of culture.

The interesting department of this great metropolitan exhibition was well worthy the most studied investigation, and comprised a vast amount of every species of tools and machinery, pertaining to the most advanced systems of modern agriculture, from the most celebrated makers in all parts of the United Kingdom. There were excellent models of such bulky machines as for want of room could not be shown themselves, particularly steam apparatus for farm purposes, such as ploughs, diggers, &c. Some American machines improved and modified to meet the peculiar wants of the British farmer, attracted considerable attention. Steam as a motive power, adapted to agricultural implements, is rapidly progressing, and may be said to be the leading idea of the present age. * * * I regret that I could not see the implements and machinery to advantage, as for want of space they were closely packed together in galleries,

which were densely crowded by anxious spectators, and in this respect reminding one even at this distance, of the Floral Hall of our Provincial Exhibition on the most crowded day.

G.W.B.

LORD NAPIER ON AGRICULTURE.

At the late meeting of the United States Agricultural Society at Richmond, the English Ambassador made a speech, from which we take the following:—

When I rise to address the great assembly which has remembered my sovereign and my country, and done me the honor of recognizing my presence at this festival, I reflect with satisfaction that however ignorant of the noble industry to which you are devoted, and however incapable of justly appreciating the efforts and services which you are rendering in its cause, I may still rank myself, though in a subordinate order, among the true sons and votaries of the soil. I remember with pleasure that my father was an unsuccessful farmer, though a successful writer on the art of farming. I belong to a class whose interests and affections are deeply rooted in the land—a class whose active age is much bestowed on the business of Parliament, or negotiation, or civil government, or the profession of arms, but whose thoughts in all the vicissitudes of life and strife, still repose upon fields and sports, and who ever dream of a late return to the hereditary home. Notwithstanding this foreign vagrancy and diplomatic desertion, I remain a member of the Highland Society of Scotland; and however incredible it may appear to you, I am President of the Pastoral Association of my native country for the improvement of the breed of sheep. With such instincts and associations you will believe that I do not feel altogether a stranger here, and that I am deeply gratified by the hearty welcome that I find from the brotherhood of agriculturists, in which I claim to be an affiliated, though at present an unfruitful member.

The husbandry of America presents in its vast extension and rapid progress a spectacle to which no Englishman can remain indifferent. History offers no example of this swift, resistless, unceasing encroachment of skilled labor over the vacant and fertile domain of the savage and the brute. It is the first triumph of man, equipped with all the accumulated powers of experience and invention, over nature in her largest limits and her most gracious and bountiful conditions. In the agriculture of the United States we see with exultation a beneficent and spontaneous procession of industry, of which the field is the American continent, and of which the implement is the Anglo-Saxon arm. Such a reflection might alone furnish to my country many motives of thankfulness and pride; but it is equally certain that the agriculture of America forms one of the principal foundations of the existing prosperity of Great Britain. In the three great staples of cotton, grain, and tobacco, imported from the United States, we recognize an indispensable material for our manufactures—a main element in the food of our people, and an important basis for the revenue of the State. While the agricultural products of the United States contribute in a high degree to the resources and power of our government, and to the welfare of the industrial community, the land and labor markets of America offer to our superabundant population an inestimable refuge in periods of distress. By this convenient issue the burthen of domestic taxation is lightened, our public peace is confirmed, and our political institutions are defended against those disturbances to which they might otherwise be exposed from the passions of men without the regular means of support, and without hope of prospective improvement.

In the remarks which follow, Lord Napier, in a very polite way, points out some of the defects of American farming. With strict candor, he admits, it will be seen, that American horses, except for heavy draft, are equal to those of England. This is unquestionably so, in reference to horses for *business* purposes, however it may be in reference to the mere racer:—

While recognizing all the importance of the land and the agriculture of the United States to the social welfare of the British empire, I cannot deny myself the pleasure of expressing to you the interest which, as a mere virtuoso in rural matters, I have taken

in the external aspect of American husbandry. In some respect the prospect is often indeed unsatisfactory to the English eye. In the new parts of the country the primitive graces of the landscape are ruthlessly violated, while the artificial trimness to which we are accustomed has not begun. We mourn over the blackened and girdled giants of the forest, each of which would be the sylvan honor of an English homestead—our fastidious taste complains that the furrow is not straight, that the wheat is not clean, that the swamp is not drained, that the sward bristles with obnoxious stumps; that there is a general absence of root or green crops, and we discover a great deficiency of sheep. In the regions which have been longest under the plough, the vital forces of the soil seem to have been frequently overtaxed; the more valuable cereals are abandoned, and here and there the wilderness resumes its sway. It requires but little reflection to show that these phenomena are the natural and transitory concomitants of the first epoch of tillage, which is hasty, pitiless, and impoverishing. On the other hand, I remark that in many portions of the Union there are extensive tracts which would be considered opulent and well ordered in any European kingdom. In the absence of turnips, potatoes, and mangold-wurtzel, the English traveller is gratified by the spectacle of Indian corn, tobacco, and the vine, and further south, by the cotton plant, the rice field, and the cane, all magnificent and lucrative productions, unknown to British husbandry. There is also a greater abundance of fruit trees; the breed of horses equals that of the mother country, except I think, for the purpose of heavy draft; and the various races of cattle replenished by importations of the best blood of England, will be propagated without degeneracy, and will be formidable rivals to the parent stock.

In a country where human labor is exorbitantly expensive, the greatest ingenuity is exerted in the improvement of tools and the invention of mechanical aids and substitutes, and in this respect the triumphs of American contrivances are not only profitable at home, but are recognized and adopted by foreign nations. Much, gentlemen, has been accomplished, and the future will furnish still higher results. If we regard the dissemination of intelligence, the diffusion of tastes for rural pursuits, the increased application of capital, the scientific inspection of soils, the discriminating use of manures, the development of the home market, and the general establishment of competitive exhibitions, we may safely affirm that American agriculture has entered upon a period which will not only be reparative where the past was exhaustive, but which will gradually carry the land in every quarter to a high pitch of productiveness and beauty.

RUST IN OATS—WHAT IS IT?

Under this head the *Southern Homestead* of last week makes the following remarks. The subject is one of great interest to farmers, and the investigations should be prosecuted until the cause of their new enemy is ascertained, if possible:

Throughout the whole south western portion of the Union the oat crop has suffered from a terrible blight, which from its resemblance to the fungus substance that sometimes attacks wheat, by that name, has been called *rust*. So far as we are informed, rust in oats has hitherto been unknown. We have never read of anything of the kind, in any section of the country. The fact that it is thus unusual, opens a wide and interesting field to the entomologist, as it invites investigation in a channel, so far as we can ascertain, heretofore unexplored.

While in West Tennessee, a short time since, we took occasion to examine the blade of the oat under a microscope, (kindly furnished us by the Bailey Troupe,) and were greatly surprised with the phenomena which the glass revealed. Since then, we have followed up those examinations, by the aid of more powerful instruments, at the Medical College in this city, in company with several scientific gentlemen.

The cause of all this destruction of the oat crop is a living worm, too small to be plainly seen with the naked eye. A single blade or leaf of the oat sometimes contains hundreds of them. They lie encased in the tissues of the leaf or blade where they have been germinated, beneath the epidermis, or thin pellicle over the exterior portion of the blade, and as they progress in development, the skin of the leaf is raised into curious puffy blisters. The growth of the worm subsequently ruptures these, and it escapes to feed upon the plant. When first released from their covering, they are of a beautiful

clear red color, almost transparent, but soon begin to change color and form, getting more opaque and dark in appearance, until, in the course of transformation, they become a black bug, with legs and wings, when they attack the head or grain of the oats.

Under the microscope, the dust which remains on the leaf, closely resembles that on the wings of butterflies.

How this innumerable army of infinitesimal worms originated is yet a mystery. It is a singular fact, however, that wherever the greatest quantity of grain has fallen, there the oat crop has fared the worst. In our recent trip through West Tennessee, we saw but a single field of oats between the Mississippi and Tennessee rivers which was not a total failure, or in which it would not be folly to put a scythe blade. That field was near Denmark, Madison county, and was sown very early. It is well known that more rain has fallen in West Tennessee, this season, than in any other part of the State; hence the extreme wet weather must have had some agency in the production of this animalculæ.—It is also well known that moisture and heat will produce and multiply animal life, millions per hour, and therein we judge is the secret of this destruction of the oat crop. It is one of those cases of natural phenomena which occur only at a certain stage in the growth of plants, and under peculiar states of temperature and weather. It may happen next season, or it may not occur again for many years.

BOTS, AND THEIR INFLUENCE ON THE HEALTH AND CONDITION OF HORSES.

Several circumstances combine to make a much greater demand for the service of veterinary practitioners in Great Britain than in this country; and, of course, veterinary schools are more abundant and more patronized, and veterinary science and art cultivated to a much greater extent and more thoroughly. As an instance of the extent of the demand for knowledge and instruction in this department, we may name the fact that there has recently been published the first number of a Quarterly Review, devoted to veterinary science and art, and to comparative pathology, entitled the "Edinburgh Veterinary Review and Annals of Comparative Pathology." In style and general appearance it is said to equal any of the British Quartettes, and this initiatory number is said to contain several articles of merit. One of the articles—that on Bots—is certainly a masterly production, giving evidence of extensive observation and investigation, and of great sagacity and soundness of judgment. Of the more valuable of the statements and suggestions contained in this article, we present our readers with the following synopsis:

The opinion has long prevailed that bots were injurious to the health of horses, and frequently the cause of death. A collection of bots in the stomach has been, and is yet, very commonly believed amply to account for death when met with in horses not otherwise apparently diseased. This opinion naturally led to various attempts for their destruction and removal, for which purpose many harsh and injurious drugs and absurd measures have been resorted to.

When veterinary science became an object of study, and the habits of parasitic animals became better known, it was quite natural that opinions so unfounded or at least exaggerated, and practices so unscientific and absurd as well as injurious, should lead to a reaction; and accordingly some of the earliest writers on veterinary medicine, such as Braey Clark, Professor Coleman, &c., went to the opposite extreme, and maintained that bots in the stomach (gastric æstri,) probably tend to preserve health and counteract disease, by their gentle stimulus to the stomach; that the irritation caused by them might probably act somewhat after the manner of leeches and cantharides, so as to prevent or subdue attacks of inflammation in the eyes or lungs, or other organs, or the existence of spasms, splints, &c. Mr. B. Clark was so confident that bots were rather beneficial than otherwise to the health and good condition of horses, that in the case of a horse of his own which had not been to grass for some years, and, of course, very much out of the reach of the bot-fly or the bee, he cut off hairs from another horse charged with bot's eggs, and gave him about three dozen of them. He states that the horse "afterwards grew fatter and in better condition than I had ever known him; whether from their effect or not I do not undertake to determine, but think it not im-

probable that they contributed to it." This was going as far as could be done with any plausibility, in a direction opposite to the opinion usually prevailing, and is considered by Professor Gamgee, the writer of the article under notice, to be about as remote from the truth, as the vulgar prejudices and harsh practices which originated it, as a protest and reaction.

Professor Gamgee having had occasion for many years to import horses from Italy into England, in the former of which countries bot-flies are much more plentiful than in the latter, has had opportunities of observing these two facts—first, that the stomachs of young horses from Italy that have been out at grass in the season of æstrees or bot-fly, are usually lined with bots; and, secondly, that these horses do not thrive for several months, or until a portion at least of this accumulation of bots in the stomach has been removed. Horses in Italy are usually unfit for work until they have been a year or so in the stable, or out of the reach of bot-bees.

From these and similar facts Professor Gamgee has come to the conclusion that summer grazing, at least during the season that bot-flies are abundant, is more likely to be a source of injury than a benefit to horses; that yearling colts are probably often prevented from thriving because they get the eggs of the bot-fly into their stomachs, which thus become filled with bots; and that the attacks of the bot-fly should in every way be guarded against, because bots are very certainly injurious to the health and good condition of horses.

To this we may add that a correspondent, who has had a horse always in good health, for about fourteen years, has informed us that he has taken some pains almost every autumn to pick off by hand such of the eggs of the bot as could not be removed by currying, and that he thinks the good condition of his horse, even at the age of about eighteen, is very probably somewhat owing to this carefulness in diminishing the number of bot-eggs. He has further informed us that he usually succeeds in bringing away bots from other horses, by means of feeding them with green cornstalks, while by the same means but very few seem ever to be removed from the horse which is more particularly cared for as above stated.—*Country Gentleman*.

HOW TO KNOW THE AGE OF A HORSE.—The colt is born with twelve grinders. — When four front teeth have made their appearance, the colt is twelve days old; and when the next four comes forth, it is four weeks old. When the corner teeth appear, the colt is eight months, and when the latter have attained to the height of the front teeth, it is one year old. The two year old colt has the kernel (the dark substance in the middle of the tooth's crown) ground out of all the front teeth. In the third year the middle front teeth are being shifted; and when three years old these are substituted by the horse teeth. The next four teeth are shifted in the fourth year, and the corner teeth in the fifth. At six years the kernel is worn out of the lower middle front teeth, and the bridle teeth have now attained to their full growth. At seven years a hook has been formed on the corner teeth of the upper jaw; the kernel of the teeth next to the middle fronts is worn out, and the bridle teeth begins to wear off. At eight years of age the kernel is worn out of all the lower front teeth, and begins to decrease in the middle upper fronts. In the ninth year the kernel has wholly disappeared from the upper middle front teeth, the hook on the corner teeth has increased in size, and the bridle teeth lose their points. In the tenth year the kernel is worn out of the teeth next to the middle fronts of the Upper jaw; and in the eleventh year the kernel has entirely vanished from the corner teeth of the same jaw. At twelve years old the crown of all the front teeth in the lower jaw has become triangular, and the bridle teeth are much worn down. As the horse advances in age the gums sink away from the teeth, which, consequently, receive a long narrow appearance, and their kernels have become metamorphosed into a darkish point, grey hairs increased in the forehead, over the eyes, and the chin assumes the form of an angle.—*Practical Farmer*.

DRAINING MATCH—On the 28th December an important agricultural Draining-Match took place on the Duke of Sutherland's estate at Trencham, Staffordshire.— Three premiums were offered of £5, £3, and £2, respectively, for digging drains; the prizes to be awarded to the three workmen who should cut forty-eight yards of draining four feet deep, in the most workmanlike manner, with the least unnecessary excavation

of earth, and without occupying more than four hours in the execution. Twenty-six sets of candidates from various counties in the kingdom competed. Parties gaining the first prize completed the work in 3 hours 56 minutes; second prize, 3 hours 59 minutes; third prize, 4 hours. The execution of the work generally, is said to have been very superior; many of the unsuccessful candidates' work being equally well done, but occupying more time. Two prizes were given for laying down the pipes, of £2 and £1 respectively; and owing to the number of competitors the distance was reduced from 48 to 24 yards. The person taking the first prize completed the work in 5 minutes; second, in 5½ minutes, and the third was highly commended, occupying 6 minutes. All the unsuccessful candidates were liberally rewarded for their labor, and at the termination of the work were sumptuously entertained. A large number of spectators, including many of the nobility and gentry was present, and appeared highly delighted with the performance.

THE FAT CATTLE AND ROOT SHOW OF THE ROYAL DUBLIN SOCIETY—The late Exhibition of this venerable society, the oldest, we believe, in the United Kingdom, was highly successful. The cattle were well bred and sufficiently fattened for all useful purposes. Some Stock from a cross between the Shorthorn bull and West Highland cow were much admired; they are said to possess the symmetry and shape of the former, with the external rough coat and interior good beef of the latter. In roots the show was unrivalled; the soil and climate of Ireland, with good culture, produce crops of potatoes, turnips, cabbage, mangels, &c., superior not only to any other portion of the United Kingdom, but, perhaps, to any part of the world. From fifty to sixty tons of Turnips and mangels per statute acre are not uncommonly raised in the vicinity of Dublin.

EXMOOR PONIES.—At the recent Brampton Fair the four-year old ponies averaged £15 10s each. Some of the picked reached £30 each; these prices being considered good for rough animals that had lived on wild grass which nothing else would eat.

SALE OF MR. OVERMAN'S FLOCK.—This celebrated breeder of South Downs, of forty years standing in the county of Norfolk, has disposed of his entire flock, consisting of 749 animals, himself retiring from business. Highest price of Shearling Ewes, 8½ guineas; four toothed, 5½ guineas; several lots reached from 4 and 5 guineas; six-toothed or full mouthed Ewes, 4½ guineas; Ewe-lambs, 2½ guineas; Shearling Rams, 30 guineas, several fetching from 20 to 27 guineas; two Shear Rams 45 guineas; three Shear Rams, 18 guineas; four Shear Rams, 7 guineas; Ram Lambs, 14 guineas, many went at from 4 to 8 guineas. Mr. Overman resides in the agriculturally-classic Holkham district, on which the genius of the late Lord Leicester—better known as Coke of Holkham, conferred such lasting benefits. His flock contained several animals derived from the flock of the world renowned Jonas Webb of Babraham.

MR. CHAPMAN'S NEW HERD OF SHORTHORNS.—We are pleased to learn that Mr. Chapman, of Clarkville, Madison Co., N. Y., has resumed the breeding of Shorthorns, in which class, for a number of years, he produced some very superior specimens; several having been purchased by Canadians, by whom his former stock was highly appreciated. We heartily wish Mr. Chapman, who is an honest, straightforward dealing man, every success in his renewed efforts. The *Country Gentleman* observes:—"Mr. Chapman has secured the entire herd of Thomas Richardson, of West Farms, Westchester co., N. Y. Most of this herd were imported by Mr. Richardson with his characteristic liberality, and without regard to expense. They count among their sires such bulls as Baron Warlaby (7813)—Crown Prince (10,087)—Hector (13,002)—Hopewell (10,332)—Royal Buck (10,750) &c., &c., all bulls of great celebrity both in England and in this country. This herd is perhaps more deeply bred in the celebrated Bothe blood than any herd in this country, and as Mr. Boothe now refuses to sell any more male animals from his herd, they cannot at this time fail to be well appreciated. They are now all at the "Mount Pleasant Farm," excepting Lady Constance, which will be sent out soon. Mr. Chapman will be pleased to show the herd to all persons who feel an interest in fine stock."

WHEAT AS FOOD FOR CATTLE.—The present low price of grain, more particularly of wheat, in England, has led many farmers to use the latter for fattening stock. A Suffolk correspondent of the *Mark Lane Express* says: "I venture to offer you my experience on the value of wheat as the cheapest and best food you can at the pre-

sent time consumed, for grazing bullocks and pigs. A peck of wheat per day (boiled) will graze an ox, with the addition of a small quantity of roots, faster than the same value of the best linseed cake. I am also feeding all my cart horses upon it, and never saw them look better, or kept them at less cost."

DISTINGUISHED POTATOES.—In Gerard's time, 1597, Virginian Potatoes, as they were then called, were just beginning to be known. A sweet potatoe had been previously known, which was used as a kind of confection at the tables of the rich. Of these Gerard says, "They used to be eaten roasted in the ashes; some, when they be so roasted, infuse them, and sop them in wine; and others, to give them the greater grace in eating, do boil them with prunes and so eat them. And likewise others dresse them (being first roasted) with oil, vinegar and salt, every man according to his own tastes and liking; notwithstanding howsoever they be dressed, they comfort, nourish, and strengthen the bodie." They were sold by women, who stood about the Exchange with baskets. The same writer says of the common potato, which, for a considerable time after its introduction was a rarity, that, "It was likewise a foode, as also a meete for pleasure, being either roasted in the embers, or boiled and eaten with oile, vinegar, or dressed anie other way by the hand of some cunning in cookerie." They were originally the size of walnuts.—*Philp's Progress of Agriculture.*

Horticultural.

FRUIT-GROWERS' ASSOCIATION OF UPPER CANADA.—The want of some means by which the horticultural societies of the province might combine their separate influences, and thus advance the interests of the lovers of fruit, has been for some time experienced. Steps were taken during the late Provincial Exhibition in Toronto for the establishment of a central organization, and a Committee was appointed, consisting of a number of leading fruit-growers, to draft a Constitution and By-laws, to be submitted to a meeting to be held here on third Wednesday in January. This was accordingly done, and an Association organised, bearing the name of "The Fruit Growers' Association of Upper Canada," whose objects are "the advancement of the science and art of fruit culture, by holding meetings for the exhibition of Fruits and the discussion of all questions relative to Fruit culture, by collecting, arranging and disseminating useful information, and such other means as may from time to time seem advisable."

The means for collecting information in relation to the subject appear to us very simple, and likely to be efficient. They are the establishment in each county of separate sub-committees, to consist of the Presidents of the Horticultural Societies it contains, and of two other gentlemen, who may or may not be members of such societies; which Committees are to transmit semi-annual reports to the Central Committee.—Thus the experience of individual Fruit Growers all over Canada may be collected and disseminated for the good of the whole community. Need we say that we wish success to an Association with such objects.

The officers elected for the first year are as follows:—

President—Judge Campbell, Niagara.

Vice Presidents—J. Hurburt, L. L. D., Hamilton, and Geo. Leslie, Esq., Toronto.

Recording Secretary—Arthur Harvey, Esq., Hamilton.

Corresponding Secretary—J. D. Humphreys, Esq., Toronto.

Treasurer—Ed. Kelly, Esq.

The local committees throughout the country are not yet fully organised. The representative members for York and Peel are Messrs. Gray and Fleming; those for Wentworth—Messrs. Freed and Meston; those for Brant—Messrs. Arnold and Wilson.

The Sub-Committee on management consists of Messrs. Fleming, Hurburt, and Les-

lie; that on orchard fruits, of Messrs. Arnold, Leslie and Kelly; that on other fruits, of Messrs. Gray, Meston, and Ficed; that on publication, of the Secretaries, and Dr. Hurburt.—*Hamilton Spectator*.

MORAL OF THE GARDEN.—Nothing teaches patience like a garden. All have to wait for the fruits of the earth. You may go around and watch the opening bud from day to day; but it takes its own time, and you cannot urge it on faster than it will. If forced, it is only torn to pieces. All the results of a garden, like those of life, are slowly but regularly progressive. Each year does a work that nothing but a year can do. "Learn to labor and to wait," is one of the best lessons of a garden. All that is good takes time, and comes only by growth.—*Farmer's Magazine*.

RISKS OF HORTICULTURE.—It is very easy for a writer to say that cauliflowers like rather a stiff and heavily-manured loam, and beet a very deep and fine mould, in which there is no recent manure; but the fact is, there are many other conditions essential, and we cannot judge fairly of the growth of anything in a soil until that thing has actually been tried in it. Tell me where, within a telescopic view of the metropolis, can they grow clover as they do in Hertfordshire; or where did you ever see such celery as they raise in the rich loams beside the Thames, a little to the west of London? The same cart-load of mould put down on the Kentish chalk would produce a very different result to what would follow were it shot on the gravel of Hampstead; and if you get into the Fen country, you might find gardening quite a different affair to what it would be on the sides of Malvern Hills. Therefore, before you risk much in seed, and labor, and rent, make a fair guess as to the nature of the crops best adapted to your position. If you grow for market, you must be very much guided by the nature of the demand for certain articles. A man may grow strawberries for Covent-garden, and get three shillings an ounce one day, and sixpence an ounce the next, and these fluctuations must be taken account of by the man who intends to speculate in allotment and garden culture.—*Floral World and Garden Guide*.

THE TRADE IN ST. MICHAEL'S ORANGES.—The Orange is one of a numerous family of fruits, produced by handsome evergreen trees, bearing fragrant flowers, and peculiar to countries within the tropics, or enjoying an almost tropical climate. The lime, the lemon, and the citron, all belong to the orange family, and to these are to be added the forbidden fruit and the shaddock, the largest members of the tribe. In all, there are said to be no less than seventy-five different species of oranges alone, of which the St. Michael, the blood-red, the Maltese, the Mandarin, and the bitter or Seville orange are the kinds most commonly imported into this country. Our own experience of the grateful and refreshing juice of the orange will easily enable us to understand the high estimation in which it is held by the parched inhabitants of its native climates, where growing in rich profusion, it may be said to be rather a necessity than a luxury of life. In the days gone by, when steam and electricity were slumbering agents, our supply of oranges came to us almost exclusively from Spain and Portugal; but now the Azores and the Madeira Islands alike send us their rich cargoes, while others reach us from Crete and Malta. The St. Michael orange is cultivated, as its name implies, in the island of St. Michael, one of the Azores, or Western Islands, and is also grown in other islands of the same group. The culture of the orange in these islands is now a regularly established branch of industry, and the inhabitants depend almost entirely on the produce of their quintas, or orange gardens, for the means of subsistence. A quinta may belong to a poor man, and contain only a few trees; or it may be in itself a large property, and have as many as a thousand. The trees are planted at about twenty-five or thirty feet apart, in regular rows, protected by tall shady hedges. They take seven years to arrive at maturity, and from that age, if properly cared for, continue to bear well till they attain to a great size and an enormous age. In good seasons some of the larger trees yield as many as twenty boxes, of a thousand oranges each, and as many as 26,000 fruit have been known to be gathered from one of these prolific trees. No wonder that, during the ripening season, large supports have to be placed under the branches, to prevent them from being torn away from the trunk by the great weight of plump and juicy fruit that grows amidst their glossy foliage. The quintas of the Azores are in full blossom in the month of April. By October the most forward oranges begin to ripen, and in November the first gathering is made for the London market. The orange harvest occurs in January and February; and by the end of the

latter month the trees are cleared of their juicy burden, and most of the fruit has been despatched from the islands. In Spain and Portugal the same mode of culture is practised as in the Azores excepting that there no fences are required to shade the trees. The orange trees of these countries, however, are of greatly inferior size, and the average yield proportionably less, the usual annual crop of one of the Seville trees being about 8,000.—*Hogg's Instructor.*

Miscellaneous.

SALTNESS OF THE OCEAN.—Whence did the ocean derive its saltness? We can only surmise that it was from the immense strata of salt formerly existing in vast basins now occupied by its waters. Such strata, as has been already noticed, exist in England, Poland and elsewhere; and if by any mighty shaking of our globe, that which is now land were to become the bottom of an ocean, to be formed from the influx of subsequent floods of rain and rivers, enough salt would be supplied from strata of salt already known to render that post-millennial ocean gradually as saline as the present.—*Johnson's Chemistry of the World.*

LIBRARIES.—Are the shrines where all the relics of ancient saints, full of true virtue, and that without delusion or imposture, are preserved and repose.—*Lord Bacon.*

FUTURE PROGRESS.—There were times when man having but meagre knowledge, and rare opportunities of acquiring it, the onward march of improvement was made by timid and irregular steps; that which was gained in one generation was frequently willingly relinquished in another. The mind of man was so weak that it dare not grapple with things unknown; but the time has come, thanks to those heaven-born spirits who led the way to the assault of Ignorance, when men have not only shaken off their chains, but made useful tools of the fetters that bound them. The whole people is now at school; millions of papers and tens of thousands of books are their daily teachers. If men could grope their way from the darkness of the past, and accomplish so much good in spite of vast impediments, what are they likely to do, now that they have kindled the lamp of knowledge, and can see their way into the broad avenues of the future.—*Philp's History of Progress in Great Britain.*

EFFECT OF CLIMATE ON NATIONS.—It is certain that excessively hot climates are unfavourable to the population, wealth, civilization, refinement and general prosperity of nations; for although the tropical zone abounds with delicious fruits and other ailments, it is deluged with rains for six months, attended with dreadful hurricanes, and parched with drouth during the remainder of the year; while the frequency of earthquakes and volcanic eruptions causes the overthrow of many cities and the destruction of many thousand lives, not to mention the pestilential character of the atmosphere.—Such is the deleterious influence of the torrid zone on the growth of population, that in the vast continent of Africa it does not exceed 57,000,000, or, if we take the estimate of Balbi, 60,000,000, on a territory of 11,000,000 square miles, a large proportion of which is found above north latitude 30 degrees, where the mean temperature of the year varies from 78 to 98 degrees, and where considerable advances have been made in wealth, civilization, arts, sciences and social improvements as in ancient Egypt, Carthage, and other Phœnician states.—*Metcalf on Caloric.*

HORSES vs. OXEN.—No one who observes the working of both animals together at general farm work, but must acknowledge the superiority, in point of quickness, of horse over ox-power—and “time is money,” here as elsewhere.

PRODUCE OF CORN IN ANCIENT TIMES.—The returns of seed sown, as mentioned by ancient authors, are very remarkable. A hundredfold, Varro informs us, was reaped about Garande, in Syria, and Bysacium, in Africa. Pliny adds, that from the last place there were sent to Augustus, from his agent, nearly 400 stalks, all from one grain, and also 340 stalks. He says he has seen the soil of this field, “which, when dry, the stoutest oxen cannot plough; but, after rain, I have seen it opened up by a share, drawn by a wretched ass on one side and an old woman on the other.” The re-

turns in Italy were much less extraordinary. Varro says, "There were sown on a jugerum four modi (pecks) of beans, five of wheat, six of barley, and 10 of far (maize), more or less, according as the soil is rich or poor." The produce is in some places ten after one, but in others, as in Tuscany, fifteen after one. This, in round numbers, is at the rate of 21 and 32 bushels on an English acre. On the excellent soil of Leontinum, in Sicily, the produce, according to Cicero, was no more than eight to ten for one. In Columella's time, when agriculture had declined, it was still less.

NOISES IN THE SICK ROOM.—It is extraordinary how many persons, unused to the sick room, mistake certain noises for quiet. When such people have to walk across the room, they do so with a balancing sort of movement that makes every plank creak unceasingly. Their very dress rattles in a way that would make the fortune of a rattle-snake. If anything has to be said it is spoken in a loud, whirring whisper, that nearly conceals the words, but makes the most irritating of noises. Now the silence of a sick room must not be laboured, it must be natural. Shoes that do not creak must be worn, and in walking the foot must be put down carefully, of course, but with a firm step, that comes gently, yet steadily, on the floor. This will not make the creaking sound caused by the toe-pointed, gingerly mode of movement so much adopted by those whose experience of sick rooms is small. The dress must be made of some noiseless material, wool or cotton; silk must be avoided, for it squeaks with every movement. In speaking, the pitch of the voice must be slightly raised, and the words, instead of being hissed in whispering, should be clipped short, and cut distinctly. By this means the persons spoken to will hear what is said, while the least possible sound accompanies the word.—*Barwell's Cure of the Sick.*

PHYSICAL CHANGES AND PERSONAL IDENTITY.—The 116lb weight of water which forms three-fourths of the matter composing our bodies is rejected with great rapidity in respiration and natural discharge. The carbon is expired with each action of the lungs in large quantities, combined with oxygen, another constituent of our bodies, in the form of carbonic acid. The lime escaping in other ways is rejected from our bones and replaced by a fresh supply. There is not a movement of the body, whether voluntary or involuntary; not an action of a member, a muscle, or a nerve; not a pulsation of the heart or arteries; not a peristaltic motion of the intestines, which is not the proximate cause of the rejection of used-up matter and the demand for a fresh supply from the digestive apparatus, just as in a machine the wear and tear of the parts is proportional to the force and continuance of their motions. Although the rapidity with which the materials of the body are thus changed varies, in comparing one individual with another, according to their varying habits and occupations, it appears that a total change of the material constituents of the body takes place within an interval much shorter than was supposed by the early physiologists. According to some authorities, the average length of the interval does not exceed thirty days. It is, however, generally agreed that it is a very brief period. This, then, being the case, let us again ask what is it that was identical in the Duke of Wellington dying at Walmer, in September, 1852, with the Duke of Wellington commanding at Waterloo in June, 1815. Assuredly it was not possible that there should have been a single particle of matter common to his body on the occasions. The interval consisting of a period of thirty-seven years and two months, the entire mass of matter composing his body must have undergone a complete change several hundred times; yet no one doubts that there was something there which did not undergo a change, except in its relation to the mutable body, and which possessed the same thought, memory, and consciousness, and constituted the personal identity of the individual; and, since it is as demonstrable as any proposition in geometry that something which thus abode in the body, retaining the consciousness of the past, could not have been an atom, or any number of atoms, of matter, that is to say, something spiritual.—*Dr. Lardner.*

SYMPATHY OF THE NERVES.—When the nerves from long habit have been accustomed to transmit their messages from distinct parts, and are suddenly cut off from them, they still retain along with their trunk the sympathetic or sensational actions. Thus, a man who has had a leg amputated will feel distinctly along the course of the trunk of the nerve sensation from toes which no longer exist. The mind also is influenced by this; and frequently this peculiar direct nervous action can only be allayed by that which is negative and reflex. A curious instance occurred within my own experience. An old sailor suffered much from this; he retained his diseased foot too long, but at

last consented to amputation. I knew him only with a wooden leg. When he had his nervous pains, he always called for hot water, into which he put his wooden stump. If told of his folly in supposing that such a proceeding could do any good, he would become enraged, and his paroxysm of pain would increase; but if gratified, he took things easy, and the process actually seemed to do him good, though all must know there could be no real benefit. Still here is the effect of mind over mater.—*Ridge on Health and Disease.*

THE CLIMATE OF AUSTRALIA.—There are days, and in some years whole weeks together, of delightful weather, cool and bracing as the spring in England, but more beautiful and exhilarating. Excepting about twenty-five extremely hot days, and sixty disagreeable wet or cold days, the weather throughout the year is indescribably pleasant, the air is balmy and bright, scarcely a cloud is visible, and the sun looks down from the deep blue sky in unveiled splendor. Day and night are nearly equal lengths throughout the year. The sun never remains above the horizon more than about fourteen and a half hours, nor less than ten and a half; and, as twilight does not linger in these latitudes, the changes from day to night, and from night to morn, are to Englishmen unpleasantly abrupt. The nights are enchanting. The southern constellations shine forth from the hard dark heavens in unrivalled brightness, and the haloed moon pours her chastened radiance on the plains and hills with such refulgence, that everything for miles around is distinctly visible. The light of both the sun and moon is more intense than in Britain. I should say the difference is as five to three.—*F. Lancelott, Esq.*

HOW TO BURN COAL.—*Graham's Magazine* has an article on coal buying and burning, from which we select the following:—"The great mistake of all is to put on too much coal, as if it were wood—the greater the quantity, the greater the heat. If too much coal is applied, the combustion is necessarily imperfect, because the fire is 'choked up,' the draught destroyed, and the elements of the coal slowly escaping from it, pass off to the chimney unconsumed, or disseminated in gases through the room. Whereas, if the strata of coal be but moderate, a red flame will play around the interior of the stove, by which entire combustion and a healthy heat are secured. One ton of coal, therefore, by thorough combustion, will often secure more heat, and a healthier atmosphere, than two tons consumed in the ordinary way; and this is a fact which can easily be demonstrated." It will be very important, this winter especially, to have attention paid to this rule.

WINDOWS OPENED MORE WOULD KEEP DOCTORS FROM THE DOOR.—A very large quantity of fresh air is spoiled and rendered foul by the act of breathing. A man spoils not less than a gallon every minute. In eight hours' breathing a full-grown man spoils as much fresh air as seventeen three-bushel sacks could hold! If he were shut up in a room seven feet broad, seven feet long, and seven feet high, the door and windows fitting so tightly that no air could pass through, he would die, poisoned by his own breath, in a very few hours; in twenty-four hours he would have spoiled all the air contained in the room, and have converted it into poison. Reader, when you rise to-morrow morning, just go out of doors for five minutes, and observe carefully the freshness of the air. That air is in the state in which God keeps it for breathing.—Then come back suddenly into your close room, and your own senses will at once make you feel how very far the air of your chamber is from being in the same wholesome and serviceable condition.

THE SKY.—It is a strange thing how little in general people know about the sky. It is the part of creation in which nature has done more for the sake of pleasing man, more for the sole and evident purpose of talking to him, and teaching him, than in any other of her works, and it is just the part in which we least attend to her. There are not many of her other works in which some more material or essential purpose than the mere pleasing of man is not answered by every part of their organization; but every essential purpose of the sky might, so far as we know, be answered, if once in three days or thereabouts, a great, ugly, black, rain-cloud was brought up over the blue, and everything well watered, and so all left blue again till the next time, with perhaps a film of morning or evening mist for dew. And instead of this, there is not a moment of any day in our lives when nature is not producing scenes after scenes, pictures after pictures, glory after glory, and working still upon such exquisite and constant principles of the most perfect beauty, that it is quite certain it is all done for us, and intended for

our perpetual pleasure. And every man wherever placed, however far from other sources of interest or beauty, has this doing for him constantly. The noblest scenes of the earth can be seen and known but by few; it is not intended that man should live always in the midst of them; he injures them by his presence; he ceases to feel them if he be always with them; but the sky is for all; bright as it is, it is not

Too bright, nor good,
For human nature's daily food;

It is fitted in all its functions for the perpetual comfort and exalting of the heart, for soothing it, and purifying it from its dross and dust.—*Ruskin.*

HOME MANUFACTURES.—We are glad to learn that the extensive Ontario Mills at Cobourg are again in full operation, turning out it is said not less than six hundred yards of cloth per day. An establishment of this character and magnitude possesses far more than a mere local importance, its success or failure must necessarily affect more or less the interests of the entire Province. In former years some of the best woollen cloths were turned out of this factory; they were better suited to domestic consumption and more durable than most of those we have been in the habit of importing. Home manufactures not only transform the wool, skins, and other crude materials raised by the farmers, into useful and costly fabrics, but they create a large domestic consuming population; thereby enabling the farmer to dispose of his various productions at the highest rates and in a home market. In reference to this long closed factory the *Cobourg Sun* describes: "The five stories as no longer presenting a huge and empty pile of brick walls with silent machinery. The hum of the spindles and the clank of the looms, strike the ear of the pedestrian, while a closer inspection of the interior shows over sixty active operatives diffusing a vital energy through every corner of the building, while engaged in the honorable employment of manufacturing for Canadians handsome and durable textures from the crude fleeces of our own flocks."

PLEURO PNEUMONIA.—This destructive disease, sometimes called "the Lung Sickness," appears from recent accounts to be committing fearful ravages among horned cattle in the southern and eastern portions of Africa, to which continent its periodical recurrence and most fatal effects appear to be principally restricted. Australia is generally remarkably free from cattle disease, and we are not aware that this complaint has made its appearance among our cattle here in Canada, or in the United States. It has lately reappeared in Ceylon, with destructive effects; and its ravages in Europe for several years past, have been severely felt. As the British Islands have not been exempt from its visitations, it is quite possible that the disease (which is generally regarded as highly infectious) may by means of importations, or otherwise, reach this continent, and it becomes desirable that our farmers should be made acquainted with its general characteristics and mode of treatment. In Europe, thousands of the finest cattle have fallen victims to this fearful malady, while in Africa it appears that a loss of one half of their immense herds, is of no uncommon occurrence, and even among the inhabitants themselves, a pestilence has been spreading from eating of the meat that was slightly diseased.

The more usual symptoms of the disease are the following: "The animal will carry its head in a peculiar low manner, its neck well straightened, considerable inflammation of the eyes and nostrils, sometimes accompanied by cough, the ears hang,—the whole appearance of the animal is restless and fidgety. In a day or two it refuses to eat. About the eight or tenth day it begins to swell, and to eat and drink voraciously for a few hours, and then if it dies with the disease at its height, strangulation takes place."

The chief prevention is said to be inoculation. The greatest care must be exercised on taking the virus from an animal in the earlier stage of the disease, and to transfer it into one that appears to be entirely free; otherwise the remedy may only accelerate the malady. The operation is performed in the dewlap, or more commonly in the tail, towards its extremity. To prevent the serious inflammation that would arise from extending upwards into the body, the remaining stump after a while is amputated. In England the rubbing well into the nostrils of a diseased animal as soon as suspected, from half a pound to a pound of Stockholm tar, with a handful or two of salt, has been found highly efficacious. Several eminent European physiolo-

gists and veterinary surgeons have been directing their attention to the investigation of this virulent epidemic, the efficient treatment of which is yet a matter of much doubt and difficulty.

HOG DISEASE.—Mayor Tienmann, of New York, on Friday last received information that an epidemic had broken out among the hogs at a distillery in a small village in New Jersey. It is stated that nearly 100 hogs are carr'ed off by the disease daily, and that as soon as the keepers of the pens observe the animals stagger, they knock them on the head. The carcasses are dressed and sent to the New York market. What become of them, says the Journal of Commerce, we leave to the imagination of pork eaters.

THE CAMEL IN AMERICA.—We have taken no little interest in the naturalization of the camel among us, and have more than once expressed the hope that, in addition to the Government experiment going on so successfully, an attempt might be made to employ camels for private purposes. The first step to this, we are glad to see, has been undertaken by Mr. Weston, an enterprising gentleman who has imported upward of a hundred camels for this purpose, several of which he now has on exhibition at New Orleans, in hopes to sell them to be used on Louisiana plantations. How far the camel may be adapted to the wet and often muddy banks of the Mississippi is, perhaps, questionable. The structure of the camel's foot is not well suited to a muddy surface; yet we should suppose there must be many cotton plantations all through the South, whose products are transported to some point of shipment by land carriage over the sandy plains which border the Southern coast, that would find the camel especially serviceable for that purpose. A common camel could easily carry two bales of cotton strung over its back, saddle-bag fashion, while the largest and strongest might carry four bales. It is, however, in that half of our territory, west of the 100th parallel of longitude—a region of drouth and deserts—in which the camel will prove most useful, and to the successful settlement of the fertile parts of which its naturalization may be considered as almost indispensable.—*N. Y. Tribune.*

RELIEF OF NEURALGIA.—As this dreadful disease is becoming more prevalent than formerly, and as the doctors have not discovered any method or medicine that will permanently cure it, we simply state that for some time past a member of our family has suffered most intensely from it, and could find no sure relief from any remedy applied, until we saw an article, which recommended the application of bruised horse radish to the face, for toothache. As neuralgia and the toothache are both nervous diseases, we thought the remedy for the one would be likely to give relief to the other, so we made the application of horse radish, bruised and applied to the side of the body where the disease was seated; it gave almost instant relief to the severe attack of neuralgia. Since then we have applied it several times, and with the same gratifying results. The remedy is simple, cheap, and may be within the reach of every one.—*Laurensville Herald*

FEEDING HORSES.—The towing of boats on the Erie Canal is done in part by horses that are taken along with the boats, and partly by towing companies, who keep their horses at stations about twelve miles apart, along the whole length of the canal.—There are three of these towing companies, and they employ about one thousand four hundred horses. They have found, after great experience, that the most economical and best feed for their horses is a mixture composed of equal parts, by measure, of corn meal and mill feed—bran or shorts, weighing about twenty pounds to the bushel, mixed up wet with cut hay, and they accordingly, feed this all together.

CREOSOTE FOR WARTS.—Dr. Rainey of St. Thomas's Hospital, London, has furnished a communication to the Lancet, detailing the effects of creosote applied to warts. He applied it, among other instances, to an obstinate warty excrescence on the finger, and then covered it over with a piece of sticking-plaster. This course he pursued every three days for two weeks, when, on examination, the wart was found to have disappeared, leaving the part beneath it quite healthy.

THE AMERICAN MEAT-BISCUIT.—It is stated that 10lbs. weight is sufficient for the subsistence of an active man for 30 days, and that it has been used in the American navy, and has been found to sustain the strength of the men to whom it has been given, in a remarkable degree. Colonel Sumner, an officer in the United States' Dragoons,

who had seen it used during field operations, says he is sure he could live upon it for months, and retain his health and strength. The inventor, he says, names five ounces a day as the quantity for the support of a man; but he (Colonel Sumner) could not use more than four ounces made into soup, with nothing at all added to it. The substance of these statements may be said to amount to this— that Borden's meat-biscuit is a material not liable to undergo change, is very light, very portable, and extremely nutritious. A specimen placed in the hands of Dr. Playfair for examination was reported by him to contain 32 per cent. of flesh forming principles; for it is a composition of the essence of meat and the finest kind of flour. Dr. Playfair stated that the starch was unchanged; that consequently there could have been no putrescence in the meat employed in its preparation, and that the biscuit was "in all respects excellent." The jury and others tasted it, and found in it nothing which the most fastidious person could complain of. It required salt, or some other condiment, as all these preparations do, to make them savory. No foreign matter had been introduced into its composition; there was no salt to absorb moisture, and nothing else to interfere with the property of flour or of essence of meat. These biscuits are prepared by boiling down the best fresh beef that that can be procured in Texas, and mixing it in certain proportion with the finest flour that can be there obtained; it is stated that the essence of 5 lbs. of good meat is estimated to be contained in 1 lb. of biscuit.

SCOTLAND UNDER-PEOPLED.—Allowing for the coldness of the northern climate, as well as for the necessary sterility of the hills, on the one hand, and on the other for the salubrity of the air, for the energy of the inhabitants, for the mineral wealth, for the adaptation of the country, covered by water-power in its mountain streams, to furnish healthy sites of manufactures and towns of various kinds, the conclusion appears to be inevitable, that Scotland is under peopled, and that its resources have not yet been developed to the same extent as the resources of England.—*Census Report.*

Editorial Notices, &c.

SHORTHORNS FOR SALE.—It will be seen by advertisement that the Hon. A. Ferguson has for sale several of his Shorthorn Cattle. Mr. Ferguson has long been distinguished as a successful breeder of this kind of Stock from the best blood, his herd has always been select, and, what we conceive to be a great recommendation, for breeding purposes especially, his animals are not pampered, but reared and fed in the ordinary way.

ALSIKE CLOVER, AND AGRICULTURAL AND GARDEN SEEDS GENERALLY.—We beg to call the attention of our readers to Mr. Fleming's advertisement on the cover of this number. The Alsike clover is highly approved of in Europe, and so far as it has been tried in this country, the results have been satisfactory and encouraging. Mr. Fleming, it appears, has availed himself of the facilities which our new postal arrangements afford in the delivery of parcels, by putting up collections of garden and flower seeds at a fixed price, including postage, which can be readily sent to any post office in the Province. This will be felt as a great convenience, as people in the country can now depend on being supplied with a suitable assortment of genuine seeds at a reasonable price.

THE GARDENERS' MONTHLY AND HORTICULTURAL ADVERTISER.—We have received the second number of a handsomely got up periodical under this title. It is of quarto size, printed on good paper and liberally and neatly illustrated with wood cuts. It is devoted to Horticulture, Arboriculture, Botany and Rural Affairs. We believe it is the first attempt at a very cheap publication devoted almost exclusively to Horticultural pursuits on this side of the Atlantic, the price being only one dollar per annum,

and judging by the two numbers which have appeared, it is fully entitled to the public support. The publication office is No. 23 North Sixth Street, Philadelphia.—Editor, Thomas Meehan.

LANDSCAPE GARDENING.—We have much pleasure in stating that Mr. Edwin Taylor, as appears by advertisement, has commenced the business of giving plans, laying out and ornamenting grounds, villas, parks, cemeteries, &c., in Canada. Since the lamented death of Mr. Mundie, there has been a want felt in this respect, and as Mr. Taylor brings with him the highest testimonials as to character and ability, from the old country, we have reason to hope that he will meet with adequate encouragement.

THE RURAL ANNUAL AND HORTICULTURAL DIRECTORY FOR 1859.—This new number of the Rural Annual, Edited by Joseph Harris, Esq., of the well known *Genesee Farmer*, is replete with interesting and useful matter, clearly printed, and profusely illustrated. Single copies only 25 cents.

THE ILLUSTRATED ANNUAL REGISTER OF RURAL AFFAIRS FOR 1859.—Edited by J. J. Thomas.—We are glad to see this useful and beautifully illustrated annual continue to improve and extend its beneficial influence year by year. It is published by Luther Tucker and Son, Albany, to whose enterprise and discriminating judgment, the agriculturists, horticulturists, and machinists of this continent are deeply indebted for the diffusion of a cheap and sound agricultural literature. This annual, when quality and execution are considered, is a marvel of cheapness, only 25 cents per copy. We owe it to our readers strongly to recommend this and the preceding publication. To clubs, both Mr. Harris and the Messrs Tucker offer their annuals in connection with the *Genesee Farmer*, and *Country Gentleman*, and *Cultivator*, on the most liberal terms.

HOW TO FARM PROFITABLY.—London: Routledge & Co.; Toronto, A. H. Armour and Co.—This is a very neatly executed little volume of the sayings and doings of Mr. Alderman Mechi, by the worthy Alderman himself. The author has long enjoyed a world-wide fame, and the substance of his numerous papers and addresses on farming, with a clear and succinct description of his own system as carried out on the celebrated Tiptree estate, are embodied in the present cheap and interesting volume, nicely illustrated with a portrait of the author, for the marvellously low price of half a dollar. Here again is cheap and useful literature for the cultivators of the soil.

THE MICHIGAN FARMER, long known as one of the best agricultural monthlies, is now published as a weekly, at \$2 per annum, for single copies. Its matter and "getting up" are highly creditable to all concerned in its publication.

Speaking of weeklies we must not omit to mention **THE COUNTRY GENTLEMAN**, published by Luther Tucker & Son, Albany; **MOORE'S RURAL NEW YORKER**, of Rochester; **THE BOSTON CULTIVATOR**, and the **MAINE FARMER**, which have all commenced the new year with signs of increasing vigour and usefulness. The "Country Gentleman," in particular, when price, quality of matter and mechanical execution are considered, is certainly not surpassed by any similar periodical in either the old world or the new. We should rejoice to be assured that these weeklies had a wide circulation among the farmers of British North America.

THE FARMERS' JOURNAL AND TRANSACTIONS OF THE BOARD OF AGRICULTURE OF LOWER CANADA, has commenced a new, enlarged and much improved series, and is now the official agricultural organ of the eastern section of this Province. The English edition is under the able editorship of James Anderson, Esq., F. S. S. A., &c., &c., whose former connection with Scottish agriculture and Estate management is favorably known. The French edition is edited by J. Perrault, Esq., Secretary-Treasurer of the Board of Agriculture, who, in addition to his practical knowledge of Lower Canadian farming, has enjoyed the advantages of having studied in the national Agricultural Colleges of England and France. These journals under their new and superior management in connection with the Board, cannot fail, if persevered with as they have begun, to confer important benefits on the agriculture of this Province. We could like to see our farmers in this western section encourage this publication, which can be obtained of the publishers, De Montigny & Co., Montreal, at \$1 per annum.