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T H E

Canadian Agriculturist,

AND

JOURNAL OF THE BOARD OF AGRICULTURE

OF UPPER CANADA.

VOL. XI.

TORONTO, FEBRUARY, 1859.

No. 2.

WHEAT GROWING IN CANADA.

It has long been a generally received opinion, that by far the largest portion of Upper Canada is, from soil and climate, peculiarly adapted to the production of wheat, particularly the winter varieties. The Genesee country in the neighbouring State of New York has, till recently, been highly distinguished for the abundance and superior quality of its wheat; and we have in our own western peninsular a wide tract of land, extending to the shores of Lake Huron, comprising similar soils, and resting upon the extension of the same geological formations as prevail in western New York. In the centre and west of that State, wheat-culture of late years has been gradually contracted; and in some formerly favored districts, which used to produce thirty bushels and upwards, per acre, this crop has been almost entirely abandoned. Judging from results of the last few seasons, we are in a fair way of following the example. The evil has been gradually, and therefore to some, perhaps, almost unobservedly coming upon us, till of late the crop has been reduced in amount from thirty to forty per cent. below the ordinary average of former years. The yield of last season, as shown some months ago, in the able report on the subject by the pains-taking and efficient Secretary of the Bureau of Agriculture and Statistics, was extremely deficient. And this circumstance, coming in the wake of a commercial panic, almost unparalleled for its sudden and wide spread desolation, is sufficient to account for our present depressed and embarrassed condition.

Without attempting, at present, an analysis of this complex and difficult subject, which has already engaged the serious attention of many of the best statesmen, agriculturists, and men of science, on this continent, we may observe that the two chief proximate causes of the failure in wheat have been the midge and rust. These evils have not taken us by surprise, but have been coming on by degrees; in some seasons more marked than in others, yet, upon the whole, progressively increasing in the extent and intensity of their effects. In the absence of any reliable specific, which the most rigid investigators have hitherto been unable to discover, we may be permitted to offer a few plain and practical sug-

gestions, in the hope rather of mitigating than of effecting an immediate removal of the evil; the latter being, we fear, at present far beyond the reach of human agency.

And *first*, when we properly consider the *extremely imperfect manner* in which land is generally prepared for wheat, and the *short intervals* allowed between the same kind of crops, a certain deterioration both in quantity and quality is a result that might naturally be expected. We have been persevering in the practice of extracting, by incessant grain crops of a near affinity, those various constituents, without a certain proportionate amount of which no soil can be fertile, or profitably cultivated. As rich, virgin soils are common, found to yield a succession of bountiful crops under a rude and imperfect culture, farmers unwisely and, perhaps, unconsciously, have been induced to persist in the system till they discovered, to their cost, that their land refused its wonted returns. Shallow and imperfect ploughing, with an occasional scratching of the surface and covering the seed by the harrow, in the rudest manner, have too generally been considered sufficient for the mechanical preparation of the seed bed. And in addition to all this, land is too commonly kept in grain crop, without often any kind of manure, till it refuses to yield a profitable return.

Secondly—Land intended for wheat should not only be naturally adapted to the plant, and receive a deep and thorough cultivation, and when necessary a proper manuring, but it must also be *sound and dry*. This latter condition is the one most essential, in the absence of which, manures, and the most perfect cultivation will be, to a great extent, thrown away. In wet lands, however rich they may be in all the elements of fertility, *draining* is an essential preliminary to the profitable raising of grain, *especially wheat*. If this simple condition were obtained, we should hear comparatively little complaint of rust, winter-killing, &c. A wet soil is always cold and late, the opposite of which, viz: *warm and early*, are of the greatest consequence in wheat-culture.

Thirdly—The judicious selection of such varieties of wheat as are suited to particular soils and climate, with an occasional change of seed and strict attention to its purity and uniformity of ripening, are matters which demand special attention. As a general rule *early sowing*, leaving the precise time to be determined by the character of the season, the mechanical and chemical condition of the soil, and local circumstances, is a consideration of by no means secondary importance. If the land be very light and porous, the application of a heavy roller would be beneficial; and sowing with the drill, when practicable, is always to be preferred. The seed is in this way more regularly deposited and evenly covered, thereby securing a greater uniformity in germination, growth and ripening, and rendering the young plant far more secure against the effects, or as it is termed, "heaving out," by the alternations of freezing and thawing in early spring.

We would by no means insinuate that these few but, as they appear to us, most important precautions, would in all situations, and in all seasons, render our wheat crops invulnerable and certain, especially against that now too common and most destructive pest—the midge. But we only utter the words of truth and soberness, as the most careful observation and enlightened experience testify, when we say that natural unsuitability of soil and climate, both of which may frequently be modified by art, want of drainage, sowing wheat too rapidly in succession, or otherwise over-cropping, too late sowing, with imperfect cultivation, and impure, or inferior, dirty seed, are the chief and *often the only causes* of producing a sickly wheat plant, (and indeed of whatever other crop that may be cultivated,) thereby rendering it peculiarly fitted to be afflicted by the midge, or any other species of blight, in the numerous catalogue of disasters which afflict our grain crops.

If the ravages of insects, rust, &c., should unfortunately prove too powerful

against the spirit of these, and similar suggestions, when *faithfully* applied, which we certainly do not believe would be generally the case, no other alternative seems to remain, *but the toto' abandonment of wheat growing for, at least, a few years.* This extreme expedient, to which farmers will always most reluctantly resort, was actually carried out some years since in the Lower Province, in the Eastern States, and more recently in some sections of the adjoining State of New York; and the ultimate results have unquestionably been beneficial. We are in a much better position now to forego,—if we should really come to that,—the raising of wheat, than we should have been only a few years since, when that article was almost the only one for which the farmer could readily obtain cash. It is not so now. Notwithstanding the serious loss and inconvenience which Canada would experience by being deprived of her usual wheat crop, for which hitherto our soil and climate have proved so highly favorable; still we must not despond, as the growing of wheat does not comprehend the whole of our agriculture. Spring grains, and especially the breeding, rearing and fattening of improved breeds of live stock, could be beneficially made to occupy a more prominent and profitable position, than has hitherto been the case; and in the course of a few years the soil would be refreshed for the growth of wheat, under new and more favorable circumstances.

But to this extreme alternative, we hope and believe that there is no necessity to go. A vigorous and systematic effort to avert the present threatening destruction of our hitherto staple crop, must be unitedly and immediately made. The evil is already in our midst, and is seriously impairing both the agricultural and commercial well being of the country. We earnestly entreat our farmers to confine their wheat culture to naturally suitable soils, and to increase that suitability by all the appliances of improved systems of husbandry they can command. Of wheat, and perhaps some other kinds of grain—for a while at least,—*cultivate less and cultivate better.* Land exhausted by too frequently recurring grain crops, when properly laid down to pasture, will become gradually enriched and restored by the grazing of cattle and sheep, which can now be made a profitable branch of husbandry. Hemp and flax, and probably some other crops, not yet tried, might be advantageously introduced. We earnestly invite communications from such of our readers, in different parts of the Province, as may have any information or suggestions to offer on this very important and engrossing subject. There never was a time in the history of our yet but incipient agriculture, when careful thought and observation, united with energetic and combined action, were more urgently required than at the present juncture.

THE DOMESTICATED ANIMALS.

THE SHORT-HORNED BREED.

[Continued from page 6.]

In the briefest and most rapid sketch of the history of the Shorthorn cattle, a respectful mention ought to be made of the valuable services of Mr. George Coates, to whom we are indebted for the origination of the well known "*Herd Book*," for recording the pedigrees of this widely renowned breed. Mr. Coates was the owner of a superior breed of Shorthorns, possessing great size and strong constitutions, but somewhat coarse, when compared with subsequent herds, more closely and finely bred. His bull *Patriot* was disposed of for four hundred guineas.

The great distinguishing characteristic of this breed of cattle is the astonish-

ing ripeness of condition at which they so early arrive, and the great weight of carcase, compared with the amount of food consumed. The quality of early maturity, as it is termed, distinguished more or less the old Teeswater breeds, before the Collings commenced those improvements, which have immortalised their names. More than seventy years ago Sir Henry Grey (of Howick) bred two oxen, which weighed, when six years old, 130 stones each, (14 lbs. to the stone), and a three year old heifer, belonging to another party, fed on hay and grass alone, reached 90 stone. Mr. Waistel's four years' old ox, by the bull supposed to be the grandsire of Hubback, weighed 110 stones. Mr. Charge's ox, seven years old, weighed 168 stones, 10 lb.; tallow, 13 stones. It would be easy to multiply instances of a similar kind, but the above are sufficient for our present purpose, and the reader can readily extend them by referring to Youatt, or any other trustworthy treatise on cattle.

The following have been selected from a subsequent period, when the breed had assumed more or less of the improved form and qualities, by which it is at present distinguished. Mr. Robert Colling's heifer, at four years old, was estimated to weigh 130 stones. Mr. Walton, in Teesdale, was in the habit of selling his steers at two years and a quarter old, at from £20 to £30 each; weighing from 50 to 54 stones, fed only on vegetable food. He found, by careful experiments, that his own cattle at two years old got fatter and weighed more than the ordinary improved breeds in the country did at three years. Mr. Rennie, of East Lothian, exhibited a steer at the Highland Society's Show in 1823, eighteen months old, which weighed 118 stones, of 8 lb. to the stone. These few instances, which may fairly be considered as a sort of average of a large number, clearly indicate the advancement which the breed continued to make.

“The Durham, or improved Teeswater breed, differs nearly as much from the older cattle of the Tees, as the Dishley breed of Long-horns from the older race from which it was derived. The height is less, but the trunk is more round and deep; the limbs are shorter in proportion to the depth of body, and the chest, back, and loin, more broad, so that with less apparent bulk of body, the weight is usually greater. The skin is light colored, and the hair reddish-brown or white, either separate or mixed. The muzzle is flesh-coloured, and rarely black, the appearance of which color on the skin indicates the revival of a character of the old varieties, which modern breeders study to exclude. The horns are shorter than in the former breed, light coloured, blunt, and sometimes laterally flattened. The skin is soft to the touch, the general form square and massive, the shoulders upright, and the hind-quarter large. The uprightness of the shoulder produces a hollowness behind, which does not exist in the same degree in the Devons, the Herefords, and other varieties allied to them. The uprightness of the shoulder is regarded as a defect, but it were more correct to say that is a character in harmony with the squareness of form distinctive of the breed. Although Colling preferred cattle of a medium size, yet the breed being derived from one of great bulk of body, there is a constant tendency to the production of large animals. The breed communicates its characters readily to all others, and the first progeny, even with races the most dissimilar, is usually fine. The females retain, in a considerable degree, the properties of the Holstein race, in yielding a large quantity of milk, in which respect they greatly excel the Long-horns, the Herefords and the Devons. In the property of yielding milk, however, the new breed is inferior to the older and less cultivated one, shewing that refinement in breeding, and the greater tendency to produce fat, are unfavorable to the secretion of milk. Individual cows, indeed, are found to retain the milking properties of the older race, but this is an exception to the common result. The oxen are eminently distinguished by the property of arriving at

early maturity of muscle and fatness. Great numbers are now disposed of at the age of about twenty-four months, in the highest perfection, and of a weight at which no other cattle in Europe arrive at the same age."—(Low.)

Persons not accustomed to look with a cultivated and critical eye on the various breeds of cattle, will often fail to discover some of the most characteristic points which the experienced breeder knows either to retain or avoid. A correct conception of the true types of any distinctive breed is therefore an acquisition of the greatest practical value. The above description of the modern Shorthorn, from Professor Low, is lucid and comprehensive; and to make this matter, if possible, still more plain, we are tempted to subjoin another description of the Durham type from another distinguished authority.

"When a pure bred Short-horn is looked upon at some little distance, one is struck with the roundness and mouldiness of the whole frame of the animal; there is nothing angular or rugged about it. On approaching nearer, he admires the beautiful, long, silky coat, and the full, prominent, yet mild eye. Unlike every other breed of cattle, they are, in fact, naturally tame and docile; instead of flying from man, or fiercely attacking any one who may go near them, they will remain quietly where they may be, in meadow or yard, waiting to be caressed or made of. It is very rare to see a savage animal among the Short-horned cattle; even the bulls are, generally speaking, uncommonly gentle. When examined by the hand, they feel soft and mellow; they all handle as if they were fat, even when in comparatively low condition; and, when they have been pampered to the highest pitch of obesity, they retain the beauty of form more than any other breed in a similar state, laying on fat equally all over the body, so that, in Yorkshire phrase, they are called "level beasts," that is, not humpy. They will keep in good condition on a wonderfully small quantity of food, provided they be dry; and thus, while other breeds were famishing on bare pastures during the summer of 1826, the Short-horns were in good order. But they are very impatient of wet, and dislike rough weather, so that shelter from rain and wind appears to be absolutely necessary for their prosperity, although cold does not appear to injure them." In point of early maturity, as before stated, they are unrivalled, and they command prices far beyond what was ever before given. The famous bull *Comet*, brought 1,000 guineas; Mr. Mason's *Chilton's Monarch*, 750 guineas; and that most distinguished modern breeder, the late Thos. Bates, Esq., Kirkclevington, refused, it is said, the enormous sum of £2,000, for his bull, *Duke of Northumberland*, to go to America. As superior milkers, many of this breed are well known to the London dairymen, who call them Yorkshire cows, and prefer them to all others. Mr. Bates stated, in the "New Farmer's Journal," that, in June, 1857, his Duchess calved at Halton Castle, in Northumberland, and being fed on grass only, made, for several months, in milk and butter, above two guineas per week! The almost marvellous success, however, which has attended the exertions of many recent improvers, in effecting early maturity and fattening properties in this breed, has no doubt had the tendency of somewhat diminishing the mere dairy value of animals thus strikingly distinguished. This remark should nevertheless be taken with some qualification; for although the quality of milk generally afforded by the modern improved Short-horns is less than was the case with their coarser progenitors, the quality is unquestionably superior, yielding a comparatively greater weight of butter. This result might naturally have been anticipated, as the artificial change in the animal economy which induces an excessive secretion of flesh and fat in a short time, would be likely to produce similar effects on other secretions, particularly enriching the quality of the milk, and consequently the amount of butter. This probably will account, in some degree at least, for the numerous instances in which the most delicately improved Short-horns have produced milk which has proved particularly rich in butter.

The Short-horns which have now so long distinguished Yorkshire and other northern counties are chiefly indebted for most of their excellencies to a judicious system of crossing, especially with the improved breeds sustained in the beautiful valley of the Tees. It must not, however, be inferred that the old breed has been universally improved in a superior degree; there yet remain many differences, and some farmers, from prejudice, or otherwise, continue to prefer the common animals for dairy purposes to those more highly bred, whose chief characteristics are early maturity and strong fattening propensity. Mr. Youatt, in reference to this matter, observes: "Experience has gradually established the fact, that it is prudent to sacrifice a *small* portion of the milk to assist in feeding, when the cow is too old to continue in the dairy, or when, as in the neighborhood of large towns, her services as a dairy cow are dispensed with at an early age. This cross being judiciously managed, the diminution of milk is so small, and the tendency to fatten so great, that the opinion of Mr. Sale is correct,—'I have always found in my stock, that the best milkers, when dried for feeding, make the most fat in the least time.' This is a doctrine which will be better understood and universally acknowledged by and by, for many of the improvers of the Short-horns have but half done justice to their excellent stock. He would deserve well of his country who, with skill and means sufficient, would devote himself to the illustration of this point."

The same authority informs us that the Short-horn cow improves both in the quantity and quality of her milk as she grows older; that is, a cow of six years of age is superior, as a milker, to one of three or four years of age; and her milk will yield more butter in proportion. The milk of a single cow, on which the experiment was made, returned 373 lbs. of butter, in the space of thirty-two weeks; the lowest weekly amount being seven lbs., the highest sixteen. Her milk, during the time, averaged nearly twenty quarts per day; her food was grass and cut clover, until the turnip season; but the pasture was not of first rate quality. With abundant proofs of the value of the Short-horns as milkers, it is the breeder's interest not to neglect this point, which is compatible with every property he can desire.

It is not correct to consider the Durham breed as the only short-horned kind, but as a particular variety of a race, of which there have long been other varieties, particularly in the eastern districts of England. Of these, the more remarkable are the Holderness Cattle, the common Yorkshire to which reference has already been made. It may here be remarked that all our varieties of cattle are but slight modifications of one type, even those which are, by breeders, esteemed most opposite to each other, not merely with respect to a gradation of horns, but also to points of more importance. Thus even one of the chiefs of the Long-horned breed—the celebrated bull, Shakspeare—is represented by Mr. Marshall as having "had every point of a Holderness or a Teeswater Bull. Could his horns have been changed, he would have passed in Yorkshire as an ordinary bull of either of those breeds." There is nothing very strange, therefore, in finding the Aberdeenshire and larger West Highland breeds, which possess many points in common with the Durham breed, crossing favorably with it.

Youatt's description of the appearance and character of a milch cow may be stated in substance as follows, and the reader will not fail to perceive that the Short-horns bear, in most important respects, a close resemblance to the description. A milch cow, good for the pail as long as she is wanted, and then quickly got into marketable condition, should have a long and rather small head; a large headed cow seldom fattens or yields much milk. The eye should be bright, yet with a peculiar placidness and quietness of expression; the chops thin and the horns small. The neck should be somewhat thin and gradu-

ally thicker as it approaches the shoulder. The dewlap should be small, and the breast wide and open, projecting before the legs; the chine moderately fleshy and full; the ribs should spread out wide, so as to give as globular a form as possible to the carcass, and each should project further than the preceding one to the very loins, giving, as much breadth as possible to the more valuable parts. She should be well formed across the hips and on the rump. The legs somewhat short, with thighs inclined to thinness and gentle curvature. The tail thick at the top, and tapering downwards, with a mellow hide and little coarse hair. The udder and milk veins should be comparatively large, and the skin of the udder should be thin and uniform. The teats should be of moderate size, located equally from each other.

The following lines which appeared in the *British Farmer's Magazine* some years ago, do not express amiss the principal points of a milch cow:—

“She's long in her face, she's fine in her horn,
 She'll quickly get fat without cake or corn;
 She's clear in her jaws, and full in her chine,
 She's heavy in flank, and wide in her loin,
 She's broad in the ribs, and long in her rump,
 A straight and flat back, without ever a hump;
 She's wide in her hips, and calm in her eyes,
 She fine in her shoulders, and thin in her thighs.
 She's light in her back, and small in her tail,
 She's wide in her breast, and good at the pail;
 She's fine in her bone, and silky of skin—
 She's a grazier's without, and a butcher's within.”

The generally received principles of breeding and fattening Short-horns, and their adaptation to the climate, pastures, and markets of this country, will form the subject of a future paper.

DEATH OF PROFESSOR LOW.

We regret to learn from the last number of the *North British Agriculturist*, that David Low, Esq., late Professor of Agriculture in the University of Edinburgh, is no more. Three or four years since he resigned his chair in consequence of the declining state of his health, and was succeeded by John Wilson, Esq., who is personally known to many of our readers, and who, it will be recollected, visited Canada during our last Provincial Exhibition at Hamilton, and who has evinced, on more than one occasion, a desire to bring our productions under the favorable notice of the British public.

Mr. Low, it appears, was a native of Berwickshire, and his father was extensively engaged in the management of landed property, and enjoyed a high reputation. His son soon manifested a disposition to follow his father's pursuits, for which he afterwards showed the highest qualifications. He likewise took an active part in the management of his father's extensive farms in Berwickshire, which was the means of greatly improving his knowledge of practical agriculture, for which he was afterwards so distinguished.

In the year 1817 appeared Mr. Low's first work entitled, “Observations on the present state of Landed Property, and on the prosperity of the Landholder and Farmer.” The termination of the war had greatly reduced prices, and great agricultural distress was consequently felt. The treatise was characterised by mature judgment and marked a sympathy with the position of the tenant farmer, and secured for the author an early and high reputation. In 1825, Mr. Low removed to Edinburgh, where he afterwards resided. In 1829 the *Quarterly*

Journal of Agriculture was commenced, mainly at his suggestion; a work that has been since published in connection with the Transactions of the Highland Society, which has done good service to the cause of British Agriculture generally, and to which Mr. Low was a regular and most valuable contributor. In 1831, he succeeded Mr. Coventry as Professor of Agriculture in the University; a post which he filled with distinguished honor and ability for near a quarter of a century.

In the Highland Society Mr. Low always took a warm interest, and rendered it most important services during the greater portion of his life. He was successful in establishing an agricultural museum in connection with the University, towards which he enlisted the aid of the Government and several private individuals; contributing not a little himself.

The writings of Professor Low were numerous. Besides the treatise already mentioned, and his numerous contributions to the *Journal of Agriculture*, and the *Transactions of the Highland Society*, he published in 1834, "*The Elements of Practical Agriculture*," a work of great and original merit, which has gone through several editions, and was soon translated both into French and German, and highly appreciated on the continent. His large and costly treatise on "*The Breeds of the Domesticated Animals of the British Islands*," in two large quarto volumes appeared in 1842. It was illustrated with colored portraits of the animals painted by Mr. Shiels for the museum, the portraits reduced by Nicholson; the price being necessarily high, 16 guineas. The French Government immediately ordered its translation. In 1845 appeared a fuller treatise on the Domestic Animals than was contained in the expensive illustrated edition, without plates, which is the best work on the subject in the English language. Another work soon followed "On Landed Property and the Economy of Estates," a work which enters very fully into the principles and practices of territorial management. The first edition of an "Inquiry into the nature of the Simple Bodies of Chemistry," came out in 1844, containing many ingenious speculations, which excited considerable curiosity and attention, so that a third edition appeared in 1856.

Professor Low died in the 73rd year of his age. His character was high toned and unsullied, his manners gentle and unassuming, and his loss will be long felt by a very large circle of admiring friends and readers of his works. "So long as the man of integrity and high principle is esteemed and venerated, so long will the memory of David Low remain a bright example in the performance of duties which require a combination of such qualities as sound judgment and high moral rectitude."

Correspondence.

SHORT RAMBLES IN KENT AND SUSSEX.

[The following extracts from the letters of a youthful correspondent, now in England, although not written with a view to publication, will, it is thought, not be entirely devoid of interest to several of the readers of this Journal.]

LONDON, December, 1858.

Leaving the great, smokey, and bustling city of London, I will give you some account of a short journey, performed chiefly on foot, through some of the most interesting and picturesque nooks and corners of this delightful part of dear old England—I left our old village of Benenden on a beautiful September morning, and whilst passing through the churchyard, the old clock in deep and solemn tone announced from the

grey tower the hour of seven. Having determined to avoid as far as possible the beaten, dusty, highways, I soon betook myself to the green-winding lanes and field-paths which are so cool and delightful to the pedestrian traveller in England. A few miles of undulating country brought me to the now very small, but very ancient, village of Newenden, situated on the banks of the Rother, a small but tidal stream, which separates at this point the counties of Kent and Sussex. The valley of the Rother is mostly in permanent pasture, apparently of a very rich quality, well stocked with sheep and cattle. It everywhere presents, with its enclosing highlands, diversified by woods, corn fields, and hop gardens, scenery that is characteristically English. Soon again turning into a quiet, green land, and leaving the picturesque village of Northiam a little to the right, I reached the main road at Bickley, and soon after passing through the somewhat scattered village of Peasmarsh, arrived at the ancient town and port of Rye.—During this walk of some dozen miles, over a finely undulating country, the most pleasing and lovely landscapes, diversified by hill and dale, and the various productions of an advanced husbandry, frequently enraptured the senses. The green hop gardens, whose branches were now laden with ripened fruit, and gracefully entwining each other from pole to pole; the yellow harvest fields which had just yielded most luxuriant crops; the woods and hedges beginning to display their rich autumnal tints; and above these stately trees, and often embosomed within them, pointing up towards the bright blue heaven, was the venerable spire of some old country church, now sending forth its melodious chimes, the sounds of which die away in the neighboring valleys, still somewhat obscured by the morning mist; these were scenes that could not fail to impart a soothing influence to the imagination and the heart. Frequently was to be heard the sound of the sportsman's gun; for the season of partridge shooting had just commenced, and the sport appeared to be keenly relished. In field-sports and open-air exercises and pastimes, England still abounds, and they contribute largely to the physical health and social well-being of the people. It was delightful to witness the neatness of the cottages, often literally covered with the grape vine, which, in favorable seasons, produces abundance of very palatable fruit, or with roses, honeysuckles, &c. There seems to be in these rural districts quite a passion for flowers among the cottagers, and their vegetable gardens are in general productive and neatly kept.

The grain harvest, which had proved abundant, was generally secured, and although this was by no means amongst the most favored grain producing districts, many good farmers grew from 30 to 40 bushels and upwards, of wheat per acre. For arable land, the fields in many places are too small, and the hedges too wide and high; though I understand that great improvements have of late years been effected, in grubbing and straightening fences, draining, and superior cultivation generally. Hops are the distinguishing crop, and their culture gives a decided expression to the whole district.—Most farms have from five to ten per cent of their whole area in hop-culture, which for the last few years has been anything but remunerating. There is a peculiarity about this crop which seems to be anomalous and objectionable, that is, a liberal, general yield is the least remunerating, and two or three heavy crops in succession are sure to entail upon the planters a positive loss. This arises in great measure from the fact, that hops are subjected to a fixed excise duty on the amount produced, irrespective of price. The duty is about two pence per lb., which frequently amounts in productive years to a third or fourth of the market value. In consequence of heavy growths for the last three or four years, the hops of this district are now selling for about 6d., or a little more, per lb., which, with the fixed duty and other expenses, is an unremunerating price. Some planters have averaged of late from 15 cwt. to a ton per acre (long weight). The cost of cultivation,—exclusive of duty, picking, and curing,—is stated to vary from £20 to £30 per acre; and many planters have sustained a dead loss this and the preceding year, of from £5 to £10 per acre! A moderate, general crop, which brings a higher price, is the only one, under a high fixed duty, that can be profitable to the planters at large. There is a strong and general feeling against the duty, and very energetic measures are now being employed to obtain its total repeal. Some, however, would prefer a reduction to a total repeal, being apprehensive that, if the latter were to be effected, the import duty on foreign hops would be removed also. Hop-growing is an uncertain and expensive business, sometimes affording high profits, at others a corresponding loss. Requiring garden culture, it employs large numbers of people, at wages generally above the average price of farm labor, and the gathering of the crop is one of the most agreeable and picturesque scenes afforded by agricultural pursuits in any country, and from which both the painter and poet have drawn some of their most effective materials.

Reaching at length the ancient town and port of Rye, I at once sought out its most interesting objects, and obtained all the information respecting them, which my very limited time would permit. The town itself is built upon a hill, the base of which was formerly washed by the sea, which has now receded at least three miles. Rye is a parliamentary borough, and a member of the Cinque Ports; it was once a place of considerable commercial importance, when such towns as Liverpool were mere fishing villages. It has a difficult and shallow harbor, and its trade is principally confined to Agricultural produce, coal, lime, timber, &c. Ships of small tonnage are built here, and considerable fishing is carried on. Rye is supposed by the learned to be the *Novus Portus* of Ptolemy, and its modern name is thought to be derived from the Saxon *Rhee*—a ford; the former position of the town favoring this opinion. In A. D. 893, the Danes, under the pirate Hastings, effected a landing near this town, and afterwards took Appledon, which was in those days a considerable place, about six miles distant, but now a mere village. On entering from the north, I passed under a magnificent old gateway, the only one of five now remaining; it is a handsome gothic arch, flanked on each side by a round tower. To the right may be seen a tower or castle in a good state of preservation, erected in the reign of Stephen, and afterwards strengthened as a means of defence. The parish church, dedicated to the Blessed Virgin, is a large and ancient edifice, having at the east end of the choir an elegant ornamental window, and a tastefully carved altar in solid mahogany. The sacred edifice, however, in common with too many old gothic churches, has been so patched and attired in the course of ages, as to materially mar its general expression and effect.

Rye, occupying an eminence, commands a great many picturesque and extensive views, pleasing alike to the artist and the agriculturist. Let me digress a little. Standing on the eastern slope of the hill, the view before me was extremely interesting,—the Rother, forming here the harbor, was gently meandering to the ocean at my feet, beyond which, to the east, is stretched out in one unbroken view the vast plain of Romney Marsh, literally dotted over by innumerable cattle and sheep; the latter looking like mere white points in the distance, contrasting beautifully with the bright green surface. The whole sweep of the English Channel, from Folkestone on the east, to Fairlight Down, behind Hastings, to the west, was distinctly visible, with a fleet of merchant ships sailing proudly on its bosom. The view from the western side of the eminence embraces the ancient town of Winchelsea, and in the distance Fairlight hill, with its holy edifice standing on its brow, a conspicuous object for some sixty or seventy miles around. Immediately below my feet commences the Bride Level, noted for its scenery and rich pasturage, treading several miles westward, between the gentle hills which form its northern and southern boundary covered with wood, arable, hop, and pasture land, gradually sloping into the vale below, and calmly blending the whole—hill and dale—into one soft, wide-spread scene of perfect beauty. To an agricultural eye the whole appeared like a paradise. Stately mansions, and such farm-houses and cottages, occupied by an industrious, healthy, and united people, with, every few miles, the spire of a Christian temple embosomed in the shade of green trees and fields, directing man's grovelling thoughts from earth to heaven, form not only the most pleasing characteristics of an English landscape, but to their moral force we must chiefly look for an exposition of England's strength, freedom, and happiness.

Ascending to the northern and highest portion of Rye-hill, the view becomes still more commanding, forming in fact a complete panorama. On the south the blue waters of the English Channel are spread out before, with occasional glimpses, in clear weather, of the opposite coast of France. To the north and east the distant chalk hills of Kent bound the horizon, bringing into view a succession of ridges and valleys, resting on different geological formations, that present, I should think, a greater variety of soils and different systems of farming, within so limited an area, than are to be found in any other portion of this much diversified country, or, perhaps, in the whole world.—For instance, how different is the system of sheep farming between the chalk downs of Kent and Sussex, and the low alluvial lands of Romney Marsh! On the former, you see nothing but the fine short-woolled Southdown, fed chiefly on turnips in the field, by folding. In the latter, you find only the large, coarse, long-woolled Kentish sheep, which have to depend in great measure on the pasture of these rich lowlands during even the winter, as I find that no artificial food is given them except when the ground is covered with snow, a circumstance that only occurs occasionally for a short time.—These sheep are coarser and heavier than the improved Leicester, and not, I think, so handsome and symmetrical as the Cotswolds. They shear a heavy fleece of long sta-

pled wool, and in point of constitution, after long naturalization, are the best adapted of any breed to the exposed situation which they occupy. A considerable portion of this Marsh is below high water mark, and expensive embankments are kept up to prevent inundation of the sea. The drainage has of late years been greatly improved, so that the district is far more healthy, and the foot-rot and consumption, which were formerly so destructive to sheep, are now comparatively rare occurrences. The whole of this great tract was formerly covered by the tidal waters of the sea, and was consequently worthless. At present it rents for two to three pounds, and upwards, per acre; each acre of the better description will sustain from six to eight of those large sheep, in a fattening condition from May to December, and perhaps half that amount through the winter months. When the grass gets high and luxuriant the practice is to turn in cattle, to be succeeded by sheep, as it is not considered sound practice to allow both kinds to graze together. It is worthy of remark, that several places in this rich alluvial tract are still known by the names of their original reclaimers—several centuries ago: such as Becket's, Boniface's, and Baldwin's marshes,—ecclesiastics who owned and improved the property in connection with the ancient see of Canterbury. How vividly do the scenes in Old England's history flash into the mind, when one treads the very soil which was the theatre of their performance! After having visited the shrine of St. Thomas a Becket, in old Canterbury Cathedral, I could not but regard with a peculiar interest the portion of land which still bears his name in Romney Marsh. And notwithstanding the great changes that have taken place in the onward march of science, discovery, and civilization, every British agriculturist must acknowledge, that when learning fell into decay during the Middle Ages, agriculture, like classics, found an asylum in the religious houses, and its principles and practices were kept alive and in operation upon the estates of the Church. Despite the abuse which it has been too much the fashion in modern days to heap upon the memory of the monks, they were the best farmers and landlords of their times, and the conservators of agriculture, as they unquestionably were of classical and theological learning.

G. W. B.

(To be continued.)

THE CULTURE OF HEMP IN PLACE OF WHEAT.

To the Editor of the Agriculturist.

SIR,—I beg to request that you will give the enclosed letter, headed "what shall we raise in place of wheat" an insertion in your paper. The question is one that I have frequently put to myself, and I have no doubt that many of our farmers have done the same, at least those who live in that part of Canada infested with the midge, or, as many mistakingly call it "the weevil." In 1857 my wheat was very much injured by the little pest, and last year so much so that I never attempted to thrash it, but fed out both winter and summer wheat to my stock in the sheaf, fully determined that I shall sow no more until the plague has passed over our neighbourhood; and if I can persuade my neighbours to do likewise, I think that we may soon get rid of it. The question then arises, "what shall we raise in place of wheat?" I, for one, am inclined to follow the advice of R. N. B. and try hemp, and I think that I have some fields suited to that crop; but I am, though a farmer all my life, entirely unacquainted with its cultivation, and therefore beg you will insert this with the accompanying letter signed R. N. B., a correspondent of the *Niagara Mail*, who is so good as to say, in concluding his letter, that if required he will give a description of the most approved method of raising, rotting, &c. If R. N. B. will be so good as to say how the ground should be prepared, how sown, how much seed per acre, when sown, and how covered in the ground, what after cultivation is required, how to know when the crop is fit to gather, and how to gather it, what is to be done with it till rotted, and how it is to be prepared for market, I have no doubt that many farmers will be thankful to him, especially those who have not good or probably any books of reference, in their houses. I have many, but they have all been written in other countries, and may not exactly suit here. A very good article on the subject may be found in the "American Farmers' Encyclopædia," under Hemp, from the pen of Mr. Clay. As to a market, I think we need not fear yet, for very much hemp is consumed in the rope walks of Canada, all of which is grown either in the United States or in Russia, and the price must be pretty good or it would not find its way into our market.

About eight years ago two worthy young Scotchmen from Glasgow, came to Canada and established a rope walk on my farm. They have gone on steadily increasing their business and wordly goods, so that they are now comfortably off, give employment to many hands, and pay out a great deal of money in a year for foreign hemp. I never once heard of them having been offered a pound of Canadian hemp for sale, though the price was remarkably high during the war with Russia, when they were excluded from the markets of the world.

A few years ago Mr. Widdler of the Canada Company, placed ten pounds at the disposal of Agricultural Association, to be given in premiums for Hemp and Flax, which sum has been liberally continued by that Company ever since, in addition to their twenty-five pound prize for wheat. To assist in the encouragement of the growth of hemp and flax, the Association offered other prizes, and a diploma with the first prize, which I was so fortunate as to win the first year, on flax. Cordage made from that flax has won the 1st, 2nd and 3rd prizes at the Provincial Fairs, and the cordage sent to France, from Canada, was made from the same crop. I now feel inclined to try for the prize and diploma on Hemp, and enter into friendly competition with the "Correspondent of the Niagara Mail."

Yours, &c.,

RICHARD L. DENISON.

Denison Terrace, Toronto.

WHAT SHALL WE RAISE IN PLACE OF WHEAT?

From Correspondence of the Niagara Mail.

The destruction of the wheat crop for the last two years has demonstrated to the farmers of this part of Canada, the necessity of looking for something else to take the place of this profitable cereal, something that will bear exportation and yield a remunerative return for our labor and expense. The cultivation of roots and vegetables, unless for fattening stock, will not answer, as the consumption of them must be local, and the demand limited. If every one raised large crops of potatoes, turnips, &c, for market, it would soon be glutted, and the prices fall below what it would cost to raise them. Besides this, there is a risk in keeping and great danger in transporting them during the winter season.

With a soil and climate well adapted for the cultivation of fruit, it would be well for us to devote a good portion of our best land for orchard purposes. An orchard well managed, is a good investment, and one that constantly increases in value every year, throughout the natural term of one's life, and is a fine legacy for posterity; yet years must elapse, from the time of planting, before we can hope for our reward, so that it will not answer for our present relief.

There are some farms that are admirably adapted for grazing purposes, such for instance as have a living stream running through them. These could be advantageously turned to the raising of sheep and mutton, and cattle for beef and dairy purposes. The products of which are largely imported into this province, particularly the Western portion of it.

The importation of animals in 1857 amounted to £114,007; of butter, £9974; of cheese, £33,066; and of green fruit, to £39,210; all of which in a country peculiarly agricultural as we are, should have been produced within ourselves. Even in the article of eggs alone, there were imported in 1857, £4664 worth, and of meats the enormous amount of £225,716 for one year alone. Here is a field open for the enterprise of our farmers, for with the exception of green fruit alone, all these articles can be produced in comparatively limited time. Many thousand pounds are sent away for other things that might as well be produced at home, as for instance in 1857, over £120,000 were paid for seeds and tallow, which we can as well produce as our neighbors over the river. The amounts mentioned above were all sent to the United States, and form but part of our importations. There are some farms not so well adapted for grazing, but which are rich and fertile, as most lands are in this country, where they have not been impoverished by bad cultivation. Upon these I think that hemp would be a profitable crop, as much so as wheat has ever been, and not subject to such fluctuations of prices. I do not think there would be any difficulty in finding a market for all that could be raised, as we now import largely of hemp and hempen articles, especially in the shape

of cordage, which can be easily manufactured as it requires no extensive machinery.— And I am sure that rope walks would be established wherever anything like a supply of hemp could be procured, and thus help to increase the amount of our manufactured articles, in which we are now so lamentably deficient. But apart from our own wants, England would furnish us a market for many years to come, as they import from Russia, and other countries hemp to the value of millions of dollars every year, which she would be very glad to send to her colonies instead of sending her money to a foreign and sometimes hostile power.

The amount of hemp grown on an acre, like anything else, depends a good deal on the cultivation, giving from 600 to 1000 lbs. per acre, and even more in a good crop. The price in Kentucky, where hemp is largely raised, is from five to eight dollars per cwt., when merely broken without being scutched. This, taking the medium of price and quantity raised, would give about fifty dollars per acre, and as a crop, it is said, can be raised on the same ground, year after year, with a slight manuring, without deteriorating the soil, the produce, takings all things into consideration would be as large as any crop we could raise.

The cultivation of hemp, where no fall wheat is sown, interferes very little with the other operations of the farm, for after it is sown it requires no further attention, until September, when most of the grain crops are secured; and if you are not at leisure when it is ready, it suffers no loss in value if left a week or ten days before pulling.

Having determined to try hemp myself, I would like to see others do so, and if you consider its cultivation to be a matter of interest to your readers, I will give you a description of the most approved method of raising, rotting, &c.

R. N. B.

SHEEP FARMING.

To the Editor of the Agriculturist.

RYCKMAN'S CORNERS, Jan. 7, 1859.

MR. EDITOR,—I submit to the readers of the *Canadian Agriculturist* whether or not it would not be profitable for a few years to change the practice of farming. The question will naturally be asked, In what way? Well, by preparing during the coming summer and fall, for buying up a much larger stock of sheep. Have you an hundred acres of cleared land? Then I would advise you to winter over next winter 150 ewes, and so continue for not less than three years. Sheep I find to be the most profitable stock I can raise, and I believe it is the experience of others. They are a kind of stock with which you can raise money at any time; they save, too, a great amount of labor compared with wheat-raising. Now, during these three years, your land of course must be chiefly in pasture and meadow, and let this be clover as much as possible; thus your land will be resting and recruiting, and the sheep will be bringing it into a fine condition for wheat in future years. During the three years, I think ten acres of wheat may be grown each year with great profit, and this is the method I recommend: Turn under clover after the 15th of June, plough 9 inches deep, and subsoil. Ploughing being done, now harrow; then pen your sheep on this field every night, in a pen just large enough for all to lie down in; move the pen twice or thrice a-week, until they have gone all over the field. Your fallow is now well manured. About the last of August put on your cultivator, and it will need no ploughing. When ready, drill your wheat,—furrowing out your land, making good water-courses where needed, and your prospect is as good as you can well make it for a crop of wheat. This will leave that field in a fine rich condition for a number of years to come.

Now, the question is, What is the best breed for our farmers to keep? Here there is and will be a difference of opinion—some preferring the pure Leicester, others the Southdown, others a cross between the two. The latter, I believe, is really larger and more easily fattened than the Leicester, and the wool is somewhat finer. The Southdown is an easily kept sheep, and yields a fine fleece, but the carcass is small. The manufacturer of wool greatly disapproves of the cross between the Leicester and Southdown, inasmuch as it does not improve the wool. The wool in this cross is harsh,—lacking oil. The best stock of sheep for Canada, is a cross between the French Merino

and pure Leicester. By this mixture you have a hardy sheep of good size, one easily fattened, and the very best quality of wool for the Canadian and for the American market. The Leicester sheep is quite defective in the amount of oil in its fleece, while the Merino has a superabundance, by which it is enabled to endure the cold storms of rain much better than the Leicester. From this cross you therefore obtain a long, fine, and soft wool, suitable for making up into Orleans cloth and goods of that class, while it is just the thing for good Canadian cloth.

Now, in order to have such a stock of sheep as the above, it is needful that some parties should continue to raise and import the two kinds in their purity—that is, the French Merino and the Leicester. A goodly number are to be found who have done good service to our country and honor to themselves, by importing and raising the pure Leicester sheep. A few persons have directed their attention to the French Merino sheep, and in getting them have spared no trouble or money. So thinks

STEPHEN KING.

ALSIKE; OR, PERENNIAL HYBRID CLOVER.

To the Editor of the Agriculturist.

EDITORS.—Since addressing the public-spirited farmers of Canada, in the February No. of the *Agriculturist*, for 1858, on the "Alsike Clover," I wish, through the same medium, to make known my experience of it for another year, and as the results have been beyond the very sanguine expectations formerly expressed, no apology, I presume, is necessary for occupying a brief space in the columns of your excellent periodical, on a matter so important to the farming interest.

I stated having about four acres seeded down with the clover; it stood the winter admirably,—the land was a very rich clay loam, and, as the sequel will show, proved that the clover (as formerly hinted) is better adapted for a poorer description of soil than it occupied with me, especially if seed is (as it ought to be) an object with the Canadian grower.

The crop was altogether beyond anything of the kind ever seen by me; it was estimated by experienced judges at over 4 tons *per acre*! it was allowed to ripen fully, the consequence of which was a partial loss of the hay. On many parts of the field it was over six feet in length, the average certainly was over five feet, as those who noticed the sample exhibited at Toronto, had ocular proof, although the clover was lying, and the lower part of the stalk, to the extent of two feet, thereby much injured; yet there was left of excellent hay a full average crop, which my cattle at this writing are rejoicing over with all the pleasure they can express (lively looks and sleek coats), unaided, as in former years, by roots of any kind,—these being in this neighborhood, unfortunately, totally used up fattening grasshoppers for fall consumption! I have just finished dressing about 4 cwt. of seed of fine quality, taken from the hay, principally by shaking,—which I trust the various agricultural societies will enable me to distribute as widely as possible. I would suggest the propriety of the directors of these procuring some of the seed, to be given to the most enterprising of the members for trial, on condition of reporting the result. By this means only the clover can obtain a fair trial on the various soils, and under the varying temperature of this country; for my own part, I am thoroughly convinced it is the clover for Canada, and that this conviction will become universal, the rapid strides with which the "Alsike" is covering the face of the old country, and the laudatory terms in which it is spoken of by the intelligent farmers of Great Britain, are gratifying evidence.

PATRICK R. WRIGHT.

COBourg, February 13, 1859.

WARTS ON HORSES.—The following recipe appeared in a recent number of "*The Field*," a weekly London newspaper devoting much space and attention to rural subjects, especially live stock. "One part of arsenious acid, in a state of fine powder, intimately mixed with four parts of lard, may be applied over and around the excrescences every other day. This will excite sloughing action, and in about a fortnight the warts will be thrown off."

Agricultural Intelligence.

LAND DRAINAGE.—We extract from the *Colonist* newspaper, as bearing upon this important subject, part of a report of the Annual Meeting of the West Riding of York Agricultural Society, at Weston, in January last, as follows :

“H. J. Boulton, Esq., of Humberford, one of the Directors, in speaking to the Report, the purport of which he concurred in, said that he regretted he had not been able to attend meetings of the Directors lately, or he should have been glad to have suggested something for their consideration, to be embodied in their report. He had been lately in England, where he had made it his business to study the peculiar features of their agriculture and their climate, and note wherein they differed from ours. There was a general idea here that the English system of agriculture could not be carried out in this country, that our climate would not permit it; but he was convinced that this was an error, and the *sooner we disabused* ourselves of it the better. We possessed a great advantage over the English farmer in the ease and little expense with which noxious weeds could be got rid of by the aid of our hot summer sun, while in England they had to be laboriously gathered up by hand, and burnt. Another great advantage which we possessed was in our winter frosts, which pulverised and mellowed our soil a great deal better than all their clod-crushers and other expensive machines could do it in England. These peculiarities of our climate and others which he enumerated, he thought fully counterbalanced any advantages which the English farmer possessed over us in other respects. But though we possessed so fine a country, he would state that in all his travels through it (and he was well acquainted with it,) he had never yet seen a farm. Land there was in plenty, and cleared, but not a farm, or a farm stead-ing. The fertility which the land possessed when first cleared was gone. It was not cultivated. The crops we raised were contemptible. In England, crops of 40 and 48 bushels of wheat, and 80 bushels of oats, were common; even 60 bushels of wheat per acre were frequently produced, and all the other crops were in similar proportion, while here we do not now get near half those quantities. This great difference arose from the superior system of farming in England. And this superiority was brought about by the energy with which English landed proprietors, capitalists of all shades of opinion, in fact people of all ranks, threw themselves into the question of Agricultural improvement. Noblemen of the highest rank took the lead in the matter, studied it, and experimented, not lavishly and wildly, but with economy and skill, and their operations were attended with success. Here you could scarcely get any one to pay attention to the subject, or listen to anything upon it. One of the objections most strongly urged against the possibility of the adoption of the English system of agriculture here, was, that the feeding of turnips to sheep upon the ground where they grew, which was the very basis of the agriculture of England, was impracticable here, owing to the severity of the climate. Now, to show how erroneous this idea was, he would state that the Swede turnips, which were the principal crop used for this purpose, were not fed upon the ground as they grew in England, without pulling, at all. It was only the Aberdeen yellow, the white, and the other less valuable kinds of turnips that were eaten off the ground in this way. The Swedes were always pulled, thrown into heaps, and afterwards cut and fed in troughs in the field. That this could be done in this country too, he knew from actual experiment, as he had fed sheep in this way the present season up to the present time. This it was which enabled them to farm so successfully in England, to raise such immense crops, and produce such quantities of meat for the butcher. But at the bottom of the whole system of agriculture in England lay the improvement of the land by thorough drainage. People in this country did not understand the subject, nor appreciate its importance. Mr. Boulton referred to the mode in which thorough draining by the use of tiles, was performed. In England there was an Act of Parliament by which the owner of any landed property, no matter how much encumbered, could obtain money from Government to drain it, paying six per cent per annum interest and sinking fund, which paid off the debt, principal and interest, in twenty years. And this debt formed the first charge upon the land, taking precedence of all other incumbrances. In this arrangement all parties interested concurred, because it was fully admitted that the improvement of the land by drainage made it so much

more valuable than previous securities became so much the better by it, instead of being prejudiced. Under this act many millions of pounds had been expended in England, and the agriculture of that country thereby raised to the high state of perfection in which it at present is.

Mr. Boulton addressed the meeting at considerable length, the above being a very short abstract of his remarks, and was listened to throughout with much interest. He said he was carrying on operations himself to some extent, having purchased several thousand tiles, and he had men employed the whole of the present winter up to the present time, except one extremely cold day, in sinking drains on his farm. He concluded by saying that he was fully determined to urge the matter upon the attention of others, till he could impress its importance upon them, and get them to join in memorialising Parliament for an act similar to the English act.

FINE VS. COARSE-WOOLED SHEEP.—"Which is the most profitable breed of sheep, the fine-wool or the coarse-wool mutton breeds?" Taken literally, this query divides sheep into two classes—Merinoes and other sheep—and I have no hesitation in saying that the coarse-wooled sheep are the most profitable. If, however, the first half of the sentence be taken as a text, the question becomes much more difficult to answer in a country where the soil and climate are so various. No particular breed will suit all localities; and the kind that is most profitable in one place, will prove the reverse in another. Where the climate is mild, the range extensive, and mutton in little demand, of course the Merino must be the most profitable. Where the soil is rich, the pasture luxuriant, and proper shelter and winter food available, the Leicester breed and its grades will be found the most profitable. Where the soil is poor and hilly, the South-down breed and its grades will be the most profitable; and more particularly in localities where the quality of mutton is appreciated. In general, however, cross-bred sheep are the most profitable; and there is no better cross than that between the Leicester and Cheviot—combining a large quantity of good mutton with a heavy fleece of wool, besides being much hardier and better breeders than pure Leicesters. But, as far as my experience goes, the most profitable sheep are of no breed. Buy poor and inferior ewes, (of the native breed if possible,) cross them with the best Leicester or South-down rams, according to their roughness and other qualities, and they will pay from 50 to 100 per cent per annum or more. This is simply taking advantage of the established maxim in breeding, that the first cross is the best. You thus obtain an increase in mutton of from 20 to 30lbs., and an increase in wool of from 50 to 100 per cent., besides a great improvement in the quality of both. To sum up, in order to keep the most profitable kind of sheep every man must decide for himself, by comparing the qualities of the different breeds with the nature of the soil and climate, nearness to market, demand for wool, etc.—J. C. Orillia, C. W., Nov., 1858. —*Cor. Montreal Witness.*

SHEEP AND WOOL.—It has long been the practice of farmers either to sell to the butcher or slaughter hundreds, yea thousands of sheep, during the fall and winter, because they thus avail themselves of some ready money, and also for the reason that they seem to have little confidence in raising sheep for their wool alone, as a paying business. By means of this wholesale slaughter, the stock of sheep throughout the whole country has been kept comparatively small, and wool growing, except at some intervals of unusual excitement, has been in a languishing condition.

In our opinion, no stock kept upon the farm, unless we except cows in the dairy districts, pays as well for the amount invested and the expense of keeping as a good flock of sheep. True, wool is often low and slow of sale, but at the low rates, with the increase of flock, there can be very little, if any, loss under unfavorable circumstances; and for a series of ten years they prove profitable, as any one may know who will take note and consult figures.

If we can succeed in inducing the farmers of Western Canada, in places where the ridge and rust have nearly destroyed the wheat crop, to turn their attention to sheep, in part, we shall, according to our view of the subject, be instrumental in promoting their interests. One reason why farmers are averse to wool-growing is the difficulty of making satisfactory sales, as buyers are always ready to deprecate the article when the clip first comes to market, and quite as willing to hold it for a rise after they have succeeded in getting it into their hands. We do not now propose to offer any suggestions to remedy the difficulty, only to express the opinion that those farmers

who have good stocks of wool, can quite as well afford to hold it as those who often borrow the money to purchase for that object.

It is not our purpose now to discuss the relative value of coarse or fine wool sheep, or the superior qualities of any breed in either class. We are free to say, however, aside from the consideration of wool-growing, as a secondary object, that we think farmers near the cities and populous villages will find it profitable to raise sheep and lambs for the butcher.

Very few understand the proper method of raising mutton, as the great mass of sheep killed and sold at market are only in fit condition for wintering. Feeding is as essential to the production of "good mutton-chop," as to the furnishing of superior "sirloin steak," with the difference that sheep can be fattened, and well fattened too, at much less comparative cost than beesves. For fattening purposes, the large-bodied, coarse woolled sheep, as the South Downs, and their grades, with others of a similar character, are preferable.

We hope to induce farmers to an investigation of the subject, which they have ample time to do during the winter upon which we are just entering. More correct notions of the propriety and profit of sheep-raising and wool growing are needed—not for speculative purposes, but that those who would enter that field may do so with a better understanding of the subject. So also of fattening sheep. It is little understood, and practised less, except in a few instances. In summer they are easily kept in pastures, growing and fattening, to a certain extent, very cheaply. In the fall and during winter, they may be kept with good hay, turnips, barley corn meal, with the addition of a little oil-cake, occasionally, and be ready for market at any time during the latter part of winter or early spring. They should have good shelter from storm and cold, and access to clean water, and constant and regular feeding, to ensure success.—*Perth Courier*.

CURIOUS AGRICULTURAL NOTIONS.—M. D. Urcie, a French botanist, assumes that wheat is not an annual but biennial plant, and he has adopted a new method of cultivating it, so as to bring it to perfection according to his views. The ground for the reception of the seed is first well manured, either before winter or at the beginning of spring, to receive the seed between the 20th of April and the 10th of May, this time being chosen to prevent the chance of blossoming during the year. But the time of sowing may be advanced from year to year. Each grain is sown separately, allowing a large area of ground if the soil is rich, but diminishing according to its sterility. It is deposited in rows, in holes at regular distances, from nine and a half to twenty-three and a half inches asunder, in each direction, the holes in one row opposite the spaces in the next. Each hole is to contain four or five grains, two and a half inches asunder. When the plants have attained a height of four inches all but the finest one in each group are pulled up, and the single one is then left for the harvest of the succeeding year. This curious process is stated to increase the produce greatly but in our opinion it will not pay the expenses of its three years' cultivation, in comparison with annual cropping.

AGRICULTURE IN IRELAND.—The land in cultivation, excluding rich permanent pastures, is 6,000,000 acres. The former prevalence of disease in potatoes has increased rather than decreased the breadth of the land under cultivation. The increase in potato culture is upwards of a quarter of a million of acres, and the value of one to two millions of pounds more. After allowing for the quantity and value, the corn crops covered 2,748,401 acres, and the green crops upwards of 3,000,000 acres, viz., 1,617,958 acres of roots, 91,555 of flax, and 1,424,572 of clover and meadow. The succession is grain, roots, grain and grasses, sowing a four years shift. The fact that the live stock of Ireland, which was worth £33,053,478 in 1855, is worth £34,276,175 in 1858, having increased to the extent of £1,222,697 in that period, is itself a proof that Irish agriculture is in a very satisfactory and improving state; but there is an incomparably stronger proof than that, in the wonderful improvement which has taken place in the condition of the Irish people during the last ten years. From being the most wretched people in Europe, they have become one of the happiest and most prosperous.

USE OF THE POTATO.—This valuable and nutritious esculent is not only useful to us in the many tempting forms in which it is presented in its unmistakable character, but the farina extracted from it is largely used for other culinary purposes. The

famed gravies, sauces, and soups of France are largely indebted for their excellence to that source, and its bread and pastry equally so; while a great deal of the so-called cognac imported into America from France is the produce of the potato, and imbibed as the pure essence of the grape. The fair ladies of our country perfume themselves with the spirit of potato, under the designation of "eau de cologne." But there are other uses which this favorite esculent is turned to abroad. After extracting the farina, the pulp is manufactured into ornamental articles, picture frames, snuff-boxes, and several descriptions of toys, and the water that runs from it is a most excellent scourer. For perfectly cleaning woollens, and such like articles, and curing childblains it is also successfully employed.—*Scientific American*.

Miscellaneous.

DUKE OF ARGYLE ON GEOLOGY.

One of the most pleasing and hopeful of the improved phases of British society, is the practice which has recently sprung up, of several of the most distinguished members of the upper ranks giving popular lectures on the most interesting subjects connected with literature, science and art, to the working classes. We seldom get a newspaper from the old country but what contains evidence of this pleasing fact. The nobility, clergy and gentry generally, appear to be quite alive, not only to the physical but to the yet higher wants of the masses; and they are in the most praiseworthy manner exerting themselves by personal example, to promote their moral, social and intellectual improvement. We remember when it was not so;—at least, not so generally and in so high a degree as happily prevails at present. In this unity of feeling among the different classes of society, may be found the secret of England's greatness and happiness. The last number of the *North British Agriculturist*, contains the following notice of a lecture delivered by His Grace the Duke of Argyle, on Geology, past and present, in the City Hall of Glasgow, under the auspices of the Athenæum, Walter Buchanan, Esq., M. P., in the chair:—

"The Duke of Argyle was received with enthusiastic applause. He proceeded with a historical *resumé* of the rise and progress of geological science. Theories of the origin of the earth had existed from the earliest times, and, in point of fact, formed the basis of nearly every mythology; but theory and speculation were not science. The Duke proceeded to consider the advance made by Buffon, whose great work was published in 1779, some five years after the publication of Godsmith's. From Buffon to Hutton the transition was next made, the noble Duke elucidating with great clearness and force the great development which the labours of Dr. Hutton had given to the study of the stony science. The year 1799 marked a still further advance. In that year Mr. Smith, a land-surveyor, published the first geological map of English strata. After adverting to some remarkable limestone formations which he had recently met with in the Austrian and Bavarian Alps, the noble Duke referred to the recent discovery in the north of Scotland, that some rocks which the late Hugh Millar and others had always supposed were belonging to the old red sandstone, really belonged to the Silurian rocks. Certain fossils had been discovered in these rocks which placed this fact beyond all doubt. Having disposed of the leading facts of interest in the general history of geological science, the Duke of Argyle gave an interesting account of the basaltic columns of Staffa, contrasting them with some still finer examples of the same formation in France, of which Professor Rogers had furnished a diagram. The noble lecturer then adverted to some of the religious difficulties and some of the moral reflections which the science of geology suggested, concluding as follows:—"I have no intention of entering upon the religious difficulties which the progress of geological discoveries has been supposed to raise. A large number of them have been overcome;

that is to say, they have been seen to be no real difficulties at all, but to have depended, as in the case of astronomy, on the erroneous principles of interpretation which had been applied to Scripture. Such difficulties as remain will, in all probability, receive the same solution; and thus the progress of truth in one department contributes to its progress in another, for surely no unimportant advantage is attained when new light is cast on the conditions under which the literal terms of Scripture narrative or parable are to be understood. It may be well, however, in closing this lecture, to say a few words on the general result of geological science as a whole, and the prevailing impressions which it leaves upon the mind. And, first, looking outwards, as it were, the first idea which it presents, almost with overpowering force, is *time*—illimitable lapse of time. Years cease to measure it; cycles of ages appear too small a unit with which to measure its duration. When we think of it we may repeat with some nearer approach to an understanding of their meaning, the words of David—“In thy sight a thousand years are as yesterday when it is passed, and as a watch in the night.” (Applause.) The next idea which is brought forcibly before our mind is this—that, during that enormous lapse of time, a progressive series of events has been directed to a definite and foreseen result. Here again old and familiar words seem to bear a new sense—to be deeper and truer than we ever knew before—“The sea is his and he made it; and his hands have PREPARED the dry land.” What a long preparation that has been! How many worlds succeeding worlds have been required to produce our existing earth, with its variety of surface and of climate—its stores of coal, of lime and iron—the indispensable materials of human industry and wealth! And then, that wonderful history of animal life, in which we see it built up from low beginnings, through the dreadful dragons and monsters of the middle ages of geology to the higher races which now minister to the wants of man! Of all this, no other word than the word “Prepare” gives the explanation or the meaning; for it must be always remembered that what are called natural laws are not really explanatory. They define the rules according to which certain effects are produced; but they do not explain to us either the how or the why. Yet these are the ultimate questions which the human mind is ever asking, and without an answer to which nothing can be fully understood; because it is in the answer of these questions that we can alone recognise the creating and directing will. Causes are not reasons; but the reason of a thing is its only real explanation to a reasoning mind; there is nothing intelligible except intelligence.—And now looking inwards at ourselves in the light of this science, the first idea that must strike us is that which is first by the mere force of contrast, the almost infinite smallness of our own term of life. ‘Behold thou hast made our days as a handbreadth, and our age as nothing before Thee.’ But then comes a contrast of another kind—a contrast between our littleness in one aspect and our greatness in another. Our desire to know, and our capacities of knowledge, how large and wide they are as compared with our power of finding out! We can discover, and we have discovered much—we seem to see what passed for ages before we were born, or our race began. But the deepest and highest truths which we long to know are inaccessible to our researches. At moments we may be beguiled with the hope that we are on the point of seeing something of the mysteries of creation; but they recede as we advance. The Creator eludes our search. What, then, is the last and prevailing impression left upon our mind by this general review of the results of science? What but this, the reasonableness of expecting that those truths which we have faculties impelling us to seek, but no faculties enabling us to discover, should be given us by direct revelation. Science leads us to a point where our interest is most excited, and then she drops our hand, intimating that she has reached her goal, and if we would go farther it must be under another guide. It is thus that the Sciences becomes the vestibule of the Church, and Knowledge the handmaid of Religion. The Duke concluded his lecture, which occupied fully one hour and a half in delivery amidst the cheers of the audience.

Sir A. Alison, in the name of the directors of the Athenæum, presented his Grace with a life membership ticket, and adverted to the eminent abilities and eminent public services of the Duke of Argyll.

His Grace having replied, the thanks of the meeting were formally voted to the Duke, and the audience dispersed.

THE ADULTERATION OF CONFECTIONERY.—The *Lancet* has published two important reports on the adulteration of sugar confectionery, a subject which has excited much interest in consequence of the recent poisonings at Bradford and the trial arising out

of them which took place at York on Tuesday week. The first report states that out of 50 samples submitted to analysis, 11 only were genuine, while not less than 34 were adulterated. The now notorious "Daff" was detected in 13 samples, together with, in most cases, large proportions of flour. The flour was found in as many as 33 samples, either separately or together with "Daff." The kinds of flour, or starch, generally employed, are potato and wheat flour, but Indian corn flour was present in several of the articles, and in one instance, sago powder. The extent of the adulteration varied from one-fourth, one-third, to nearly three-fourths. The confectionery analysed consisted of lozenges of various kinds (including ginger, cayenne, and peppermint) and Scotch mixture, several descriptions of comfits, conversation cards, and other articles. The ordinary adulteration of comfits is with wheat flour, which is not usually mixed equally with the sugar, but the caraway or other seeds are first coated thickly with wheat flour and sugar afterwards added. The effect of this proceeding is, that when put into the mouth, the sugar only comes into contact with the tongue; and hence these comfits have at first all the sweetness of genuine comfits.—This adulteration is easily discovered, either by simply breaking the comfits crossways, when the nucleus of wheat-flour may usually be readily distinguished from the outer sugar portion, or by placing them in water, when the sugar will be dissolved, but the wheat flour will remain, retaining nearly the original size and form of the comfits. In the second report the results of the analysis of the various colouring matters used to color these articles is given. Out of 44 articles examined, chromate of lead, or yellow pigment, was detected in 24 samples; Brunswick green, which contains chromate of lead, in seven samples; artificial ultramarine in 10 samples; red lead in one; cinnabar, or bi-sulphuret of mercury in one; and arsenite of copper in one sample. In some instances two, and even three and four of these injurious or poisonous substances occurred in the same parcel of confectionery. The *Lancet* cautions the public against the use of the cheaper articles of confectionery, especially lozenges and comfits; also those made with liquors and essences, which are for the most part injurious; and, finally, all those, especially sugar-like ornaments, which are colored either yellow or green. The articles analysed were all purchased in the metropolis since the attention of the public was called to the subject by the catastrophe at Bradford.

THE MANUFACTURE OF ASHES.

[The following article, copied from the *Montreal Witness*, contains information that must be more or less useful to such of our readers as are settled upon timbered lands, where, in the process of clearing, the manufacture of potash can be often profitably carried on:]

No apology is necessary for devoting special attention to the manufacture of an article so important to the Agriculture and Commerce of Canada, as Ashes. We have therefore procured from the best sources the following information, which is designed as will be perceived not for experienced manufacturers, but for merchants and settlers in the regions of Canada, which have been recently opened up, and in which land-clearing is extensively carried on.

In the manufacture of Ashes by new settlers, board leaches are the easiest made, and cheapest, and upon the whole the best. They should be, say about eight feet long, and the boards of which they are composed four to five feet long, meeting at the bottom and diverging to a width of four to five feet at the top. A pole about 2 inches in diameter should be placed at the bottom of the leach inside, and upon that some clean straw. Then a layer of clean well-slacked lime,—say three bushels to the leach,—should be spread equally along, and trod down hard. Then fill up with Ashes the best and cleanest at the bottom, treading or beating down each layer well. Such a leach will hold 70 to 80 bushels, and if the Ashes be good, two of these leaches will make a barrel of potash. The ley runs from the leach into a trough extending all its length, and from thence into a large trough capable of holding a dozen pailsful; from this last the ley is dipped into the feeder which supplies the potash kettle. If the Ashes have been gathered from low lands, and are consequently mixed with muck and earth, an extra feeder should be employed, with a bushel or two of lime in the bottom,

through which the ley should be filtered a second time before going into the ordinary feeder. It requires great care to make good Ashes from mucky land, and unless the Ashes be very clean the same lime should not be used to make over five barrels, if the maker wishes to secure first sorts.

Ashes from timber newly cut in the fall are much stronger than at any other time. Indeed, after wood has been some time cut, and becomes dry and decaying, the ashes are of little value. The strongest Ashes come from soft or swamp elm, black ash, and maple. There is a proportion of nitre in the ley which runs from Ashes, which becomes much stronger in the last run of the leaches, and renders the ley weak. The potash made from such ley is smooth and glassy, and not strong. Strong potash should have as coarse a grain as sugar. The application of water to the leaches should be gradual, the quantity being regulated by the dryness of the Ashes.

To manufacture Ashes well is a nice process, and when the maker lacks practical knowledge, an experienced assistant should, by all means, be secured.

The following is a repetition of our circular on this subject last year, to which we have nothing to add, except that the weight of barrels should never be less than one-eighth of the gross weight, or they will not bring the highest price. If the gross weight be 5 cwt. or 560 lbs., the tare or weight of cask should be 80, and as a general rule, 80 is as near as can be guessed.

The usual causes of inferiority in Ashes are, in the first place, dirty leys,—the leaching process not being sufficiently perfect, and the raw material in many cases being field ashes mixed with a large proportion of dirt.

The next cause is adulterating the ashes with lime, salt, sand, &c. Salt should in no case be used, and lime only, in the leaches. On no account should stones, wood, raw ashes, lime, straw, or dirt, be put in to fill up a barrel.

The next cause is using weak leys. The last run of the leaches, when not able to float an egg or a potato, should never be boiled, but kept to wet the next leaches.

Another cause is bad barrels. Whisky barrels, or green and unseasoned casks, the wood of which contains moisture of any kind, will cause the ashes to deteriorate rapidly. White Oak and White Ash casks are much preferable, and Red Oak should never be used where it can be avoided—being all well seasoned.

Ashes should be emptied by coolers into the barrel, two coolers being just sufficient to fill one barrel, and there should be as little breaking of Pot Ashes as possible, as the more they are broken the more rapidly do they deteriorate by the action of the air. Ashes should never on any occasion be packed hot into the barrels.

If the ashes have begun to melt before packing, the cakes may be rubbed with dry slacked lime to prevent further melting, but lime or raw ashes should never be thrown loosely over them, as this injures the appearance, and must be separated in inspection.

Barrels must weigh at least 75 lbs. when thoroughly seasoned, and they should be accurately weighed, and that weight legibly marked on the barrel before packing—They should be packed quite full, and should be covered with solid round hoops to the extent of two-thirds of the barrel. The dimensions of the barrels used should be 20 to 22 inches diameter of head, and 30 to 32 length of stave, larger or smaller being condemned by law. The mark should be quite legible, and only one plain mark and number should be on each; as when there are two or three marks, there is more liability to confusion. The mark should be the maker's or owner's initials, as when the initials of a consignee are used, several lots may get mixed.

After packing, the barrels should be well coopered, with three shingle nails in the end hoops of each, to prevent the heads from falling out, and put in a dry place where they will not be exposed to moisture.

The grades by law established are, first, second, and third sorts, and then unbrandable Nos. 1, 2, 3, 4, and 5, each grade being an additional eighth off the selling price of Firsts. Thus, unbrandable No. 4 has seven eighths of the price of Firsts deducted, and No. 5 would sell for just nothing.

Firsts Ashes should contain 75 per cent of pure alkali, at least.

The information in the preceding article is derived partly from experienced manufacturers, but chiefly from the Ashes Inspectors, whose willingness to do all in their power to aid and encourage the manufacture of Ashes, is deserving of praise. Nothing is said here of the manufacture of Pearl Ashes, which can only be undertaken by a person of capital having the necessary buildings and apparatus, and who would, of course, procure experienced assistance.

JOHN DOUGALL,
COMMISSION MERCHANT.

THE FIRST PRINTED BOOK.

BY W. H. DAVENPORT ADAMS.

[The *first printed book*, it is said, was produced by Faust and Schœffer, at Mentz, August 14, 1457.]

With musing brow and thoughtful eye,
 The printers sit in their secret room—
 And the marvellous letters about them lie,
 And the mystic press stands apart in the gloom;
 Before them spreads each dainty line
 Of the Book just borne from their subtle thought:
 Arise, O moon! let thy lustre shine
 On the wondrous work their brains have wrought!
O World take heed! we sow the seed—
O World, beware when the millions read!

Shine out, O moon! on the printed book—
 The first-begotten from yonder press—
 Into the dusky chamber look,
 And gild with thy glow the great success!
 Light up the pale wan brow, and fire
 The sunken eye—light up the soul
 Of the printer! ay, his brain inspire
 With the victor's joy who wins the goal!
O World, take heed! we sow the seed—
O World, beware when the millions read!

Brother! O brother! my heart is alight
 With burning thoughts! O happy man!
 The cloud, and the storm, and the shadowy night
 Shall surely vanish. Ha! ha! we plan
 A noble work for the coming Time,
 To carry the torch from hand to hand:
 Methinks the bells of the Future chime
 Triumphal music in every land!
O World, take heed! we sow the seed—
O World, beware when the millions read!

No more shall Wisdom meanly lurk
 In the scholar's cell—nor the poet's strain,
 Nor sage's thought in secret work—
 Brain shall responsive speak to brain!
 The humblest hind in the lowliest cot,
 Shall bless the page where genius gleams
 With a light and a glory unforget,
 And lap his soul in the bravest dreams!
We sow the seed, but, World, take heed—
O World, beware when the millions read!

O God! may our Work be never abas'd
 To speed afar the prolific lie;
 For with noble, tender fancies grac'd,
 And generous thoughts, 'twill never die!
 Let Truth live sparkling in every line—
 Let Virtue brighten o'er each page;
 Then shall the Press be a Thing Divine—
 The priest and prophet of every Age!
O World, take heed! we sow the seed—
O World, beware when the millions read!

'Twill bless with a thousand joys the world;
 For when the flag of the Free's unfurl'd,
 And when the strong are cow'd by the weak,
 When Genius dares its crown to seek,
 When Poverty gains a helping hand,
 When Angels in the silence stand,
 And Truth, and Faith, and Hope have birth
 Spontaneous over the happy Earth,
 All men—all times—shall heartily bless
 The Work achieved by the Printing Press!

*O World, take heed! we sow the seed—
 O World beware when the millions read!*

THE VARIETIES OF NATURE.—There is more variety of pattern—in most cases of very elegant pattern—in the sliced fragments of the teeth of the ichthyolites of a single formation, than in the carved blocks of an extensive calico-print yard. Each species has its own distinct pattern, as if in all the individuals of which it consisted, the same block had been employed to stamp it; each genus has its own general type of pattern, as if the same inventive idea, variously altered and modified, had been wrought upon in all. In the genus *Dendrodus*, for instance, it is the generic type, that from a central nave there should radiate, spoke-like, a number of leafy branches; but in the several species, the branches, if I may so express myself, belong to different shrubs, and present dissimilar outlines. There are no repetitions of earlier patterns to be found among the generically different ichthyolites of other formations. We see in the world of fashion old modes of ornament continually reviving. The range of invention seems limited; and we find it revolving, in consequence, in an irregular, ever-returning cycle. But infinite resource did not need to travel in a circle, and so we find no return or doublings in its course. It has appeared to me, that an argument against the transmutation of species, were any such needed, might be founded on those inherent peculiarities of structure that are ascertained thus to pervade the entire texture of the framework of animals.—*The Cruise of the Betsy, by Hugh Miller.*

CIGARS.—The finest tobacco in the world comes from the Havana. But there is only a limited area in Cuba in which that tobacco is produced; so that whilst the Havana tobacco may be of excellent quality generally, the best is the produce of a small area, and is chiefly used in the island or as presents, a very limited amount going into general consumption. Tobacco, scarcely inferior to that from Havana, has, however, been brought from Trinidad, and the southern Russian Provinces. Manufacture, on the other hand, exercises a great influence over the quality of tobacco. In Algiers, where the climate is most favourable, the cigars are not smokeable, because they are badly prepared.—Again, some English-made cigars are of much greater excellence than many of the cigars imported from Havana, and paying the highest duty as manufactured tobacco; and there is no doubt whatever that it is quite practicable to make cigars in this country which shall be undistinguishable in appearance and not very distinguishable in flavour from any except those first class Havannah cigars, which scarcely ever come into consumption.—*Timb's Things not generally Known.*

THE TURKISH BATH.—As there has been much talk lately, about Turkish Baths, and whether it is possible or desirable to bring them into common use in this country, and as we know that there are most erroneous notions prevalent with respect to their cost and comfort, a short account of a visit to one recently constructed at South Preston Cottage, North Shields, may possess some public interest. On a fine, clear, cold, rather frosty night, just as the moon was rising above the trees, robed in the bath dress, a loose flowing cape reaching to the knees, we were conducted by our host from the vinery (with its sashes open) into the outer bath apartment, where, seated upon low stools, with the thermometer at 85 degrees, we were soon in a genial glow. Thus prepared, we entered the inner apartment (leaving the loose gown—wearing small aprons), the atmosphere at 125 degrees. Seating ourselves, *a la Turk*, on a low wooden bench, we waited in profound silence the moment when all our skin impurities should “melt, thaw, and resolve themselves into a dew.” Nor had we long to wait. Soon a most copious shower of perspiration ran from every pore. Our attendant commenced a brisk friction with hands and feet over the whole surface of the

body, and produced a result that we confess we were not prepared for. Accustomed to daily use of the ordinary warm and cold baths, and the constant use of "flesh gloves," we fancied that we had left little to be removed; but, under the skilful hands of our manipulator, we were soon divested of a rough coat of dead epidermis, that must have been a terrible obstacle to the delicate process of respiration, which nature intends to go on constantly over the whole surface of the body. Next we were rubbed from head to foot with soap, followed by a delicate stream of warm water poured over us, which produced a delightful glow of invigoration such as we have rarely experienced before. A sense of purity over the whole body, and a deep calm as of settled peace, fell upon us with all the freshness of a new birth. Next a bracing stream of cold water, and we stepped again into the first apartment. When the body had been rubbed perfectly dry we were conducted into the vinery, where, reclining on a couch, every muscle in repose, we were exposed to a current of cold air, with the loins only girded. Yet, as we imbibed a fragrant cup of coffee, there was no feeling of chill, but one of perfect health and renewed energy vibrated through the body, while through the mind, sympathising as ever with her earthly dwelling, passed rapid visions of all that was pleasant in the past or hopeful in the future; and we left the dwelling of our friend convinced that few blessings of modern civilisation, as auxiliaries to health and comfort, are to be compared to this English version of the Turkish bath.

—*The Builder.*

STATISTICS OF LONDON BRIDGE.—In ten years the number of persons passing through London Bridge Station has increased from 624,000 to 13,500,000! and of these nine-tenths cross over the bridge, being about 30,000 on foot, 10,000 in cabs, and the remainder in omnibuses. Of this multitude of railway travellers, who cross the bridge, whether on foot or in some vehicle, a large proportion are destined for parts west of Holborn and Temple Bar; and hence to reach their destinations have to pass through the city in cabs, carriages, or omnibuses, the lower classes chiefly making their way westward by the river steamers. Some idea of the degree to which the thoroughfares are crowded by this incessant flow of traffic westward may be formed from the one fact that upwards of two thousand omnibus journeys are daily performed between London bridge station and places west of Temple Bar, all of which must of course pass through the city by the Poultry and Cheapside. Of the number of carts, waggons, and other heavy vehicles we have no exact return; but if it correspond in any fair proportion to the other means of locomotion it must rise to an almost fabulous height. No other similar structure in the world endures such a daily and nightly burden of toiling, incessant traffic. Twenty-three years ago, when the bridge was first built, at an expense of a million and a half sterling, it more nearly sufficed for the wants of the busy millions who dwelt along the Thames; but now, since London has doubled its former population, and every year still adds to her teeming myriads, the accommodation seems but a narrow and scanty one. In spite of all that clever and active police can do—in spite of all city laws, rules, and regulations, the traffic on the bridge itself, and for a long way on either side of it, is too often slow and densely crowded, or comes almost to a dead stop. From the Flower Pot in Bishopsgate Street to the Town Hall in Southwark the mighty chain too often extends in one unbroken line, and the single stepping of a cart in Chick Lane, or some other trumpery affluent of a main thoroughfare, may cause a thousand charioteers to waste in impatient delay some precious half-hour, the loss of which will upset all their business plans for the day. This evil is not only great, but is actually increasing.—*Morning Herald.*

VERMIN RIDDANCE.—It is stated in *Hall's Medical Journal*, that half an ounce of soap boiled in a pint of water, and put on with a brush while boiling hot, infallibly destroys the bugs and their eggs. Flies are driven out of a room by hanging up a bunch of the plaintain or seawort plant after it has been dipped in milk. Rats and mice speedily disappear by mixing equal quantities of strong cheen and powdered squills. They devour this mixture with greediness, while it is innocuous to man. When it is remembered how many farmers have lost their lives by swallowing in mistake mixtures of strychnine, ratsbane, corrosive sublimate, &c., which are commonly employed for this purpose, it becomes a matter of humanity to publish these items.