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Agriculture, &c.

EXHIBITION OF THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

(Abridged from the *Berwick Advertiser*.)

The important biennial Show of the Highland and Agricultural Society has been held in Berwick during the first week in August.

The district in connection with the show was nominally the counties of Berwick, Roxburgh and Selkirk. The title of the society does not admit of any English county being included, and the important district of Northumberland, by which this borough is bounded on the south, therefore contributed its share to the show as one of the English counties only, the competition being open to exhibitors from all parts of the kingdom.

The agriculturists in the four counties therefore were the principal parties interested in the show, and they joined heartily in the amicable competition which has been the occasion for a display of agricultural wealth, of practical commercial knowledge, and of judicious management seldom surpassed at any gathering.

The Society awarded £1,500 in prizes exclusive of expenses incurred in the general arrangements, which cannot be estimated less than £1000 more. Of the sum awarded for premiums £416 were given to cattle in 19 premiums, comprising Short-horns, Polled Breeds, Ayrshire and Highland Breeds. To Horses for Agricultural purposes £168 was awarded in eight different premiums. £286 was awarded to Sheep in 18 different premiums. £54 was awarded to Swine in five premiums. 45 silver medals were awarded to Poultry, which comprised all the barn-door genus from the long-familiar to the more modern species of Cochin China and Dorkins. The second best in merit in this department were honored simply with a certificate of merit. £268 were awarded in 76 premiums to Implements and Machines. The entries for competition for these premiums amounted to 1,785 being nearly double the entries of the previous show here.

THE CATTLE SHOW.

The morning opened favorably, fair and a cool breeze, giving indication of an agreeable day.—The bustle of the occasion commenced with early day. Police officers were stationed at all the corners of the streets giving directions to parties in charge of stock how to proceed to the show-yard, and enforcing the observance of the regulations previously made. At five o'clock the leading and driving of stock commenced, and continued without bustle or confusion up to nearly half-past seven. At this time all had been admitted, and the arranging of the animals nearly completed. At the sound of a bugle the ground was cleared of all parties save the Judges, who proceeded to the examination of the stock and award of prizes. As the day advanced the railways disgorged their loads of human beings, and presently the streets became covered with strangers, who gave the town, notwithstanding the general closing of shops, a very animated appearance. The doors of the show-yard were opened at eleven, the admission charge being half-a-crown from that hour to twelve. During this time the ground was very well covered with visitors, and movement near the stock was only just convenient. At twelve the admission fee was lowered to a shilling, and immediately crowds of people poured in, and continued so to do throughout the remainder of the day. The number of ladies present was remarkable, and the fair sex contributed greatly to the brilliancy of the lively and animated scene. Finer weather—the light clouds shielding from the direct rays of the sun—could not have happened for this the chief day of the Show. Perhaps the most noticeable feature in the company next to that of the attendance of ladies was the large number of persons who are evidently engaged in the lower departments of agricultural labor.—The day must have been made a holiday, not only by the inhabitants of neighboring towns, but even by those who occupy the country, and the farm work must have been generally neglected for a very large district around. Near the auctioneer's room, Mr. Gourlay Steel, A.R.

T. A., of Edinburgh, had taken his station with a daguerreotype apparatus, and before the company was admitted, many of the chief features of the show had been sun-painted on his glass plates.— Mr. Steel is, we believe, employed by the Society to paint a picture 13 feet by 6, illustrative and commemorative of this Show, which will be afterwards engraved for general circulation.— Most of the leading members of the Society will be grouped in the picture, and the Mayor, in his chain of office, and Captain Mackenzie of the 42nd Highlanders, in full Highland costume, who were most prominent amid the company on each day of the show, will with other gentlemen locally connected, who took interest in the proceedings of this year, give the picture a thorough identification with this particular exhibition.

The number of entries for stock was 724.— We have no means at hand of comparison with the later shows of the Society, though we were assured on the ground that the present exhibition is not in any way inferior to those of late years. Indeed all persons with whom we conversed expressed the highest gratification at the success of the present show, and regarded it as in general of superior merit to any others of the Highland Society. As compared with the former show in this town, thirteen years ago, the advantage of the present is of course most distinctly marked; the numbers shown being now 1267 against 962. There were on Thursday about a hundred short-horns on the ground, and many of them were very superior animals. That belonging to Mr. Simson, Blanshie, and which gained the second prize of £15, was very much admired for the beautiful symmetry and true breeding which it displayed. It was, however, rather faulty in a point which is now considered of almost paramount importance, viz., a fine mellow touch.— This bull had already taken prizes at local shows, and was highly commended at the Lincoln meeting of the Royal Agricultural Society of England. The class of short-horn bulls as a whole was much admired, and the decision of the Judges was generally acquiesced in, the superiority of the prize animals being manifest. The poll breed were not numerously represented, which may be accounted for by the distance they require to be brought. The Ayrshires were considered very excellent specimens of dairy cattle; some of the cows exhibited most extraordinary milking qualities. The West Highland breed was very deficient in numbers, but those shown were considered so good as to receive the special approbation of the judges.

HORSES.

The horses were in very great number, and a high authority pronounced the opinion that while the old horses were not equal to former years, the younger animals were very much superior.

SHEEP.

The particular excellence of the show were the sheep, which were perhaps more numerous in proportion, than any other stock, and of general improved character. The Cheviots attracted very general observation for their marked im-

provement on former years. The Leicesters, although in general very good, and comprising many excellent specimens, exhibited no individuals of extraordinary merit. The Black-faced are also deserving special notice; nor should the Longwools, Southdowns, Romney March, and Dorsets, though in small numbers, be passed over, though the general high character of the exhibition forbids any details respecting them.

SWINE.

In the section of Boars of large breed some animals of extraordinary obesity and general merit were penned. The Cumberland Boar which obtained the first prize was a truly monstrous specimen of the porcine genus.

POULTRY

were inferior, and only a few specimens were worthy of a place in the show-yard.

THE EXHIBITION OF IMPLEMENTS AT WORK.

This was situated on Castle Hills farm, distant about a mile to the north-west of the town.— Here at 7 o'clock a.m., were to be found eleven ploughs harnessed to a similar number of pairs of horses. The soil was mellowed by the late rains, and neither too moist nor too dry. It was in lea, and a gentle rising ground. After the ploughs first placed had gone through sufficient work to test their capabilities, three or four others were brought forward, one of which drew considerable attention by the novelty of two rows of small digger-like wheels attached to its side for the purpose of turning up potatoes as the plough passed forward. The work performed by this plough was criticised rather freely by some farmers present, but we see that the judges, who watched its operation carefully, have thought the invention worthy of approval. The attendance of visitors, which fluctuated during the exhibition, never seemed to exceed 200 in number, and consisted generally of the agriculturists of our district. The depth to be ploughed was from 7½ to 8 inches, and the weight of the draught was particularly noticed by the judges. Considerable discussion took place amongst the general spectators as to the merits of the several ploughs, and the feeling among them seemed to be in favor of those which combined, with other qualities, simplicity of structure. A very admirable wheel plough was exhibited by Messrs. Howard, of Bedford, and it attracted greater notice than any other implement on the ground, so that up to the close of the trial it was kept in constant employment, and was attentively watched by many practical men, who seemed to take great interest in its performances, by which the prejudices of most on the ground in favor of the superiority of the Scotch plough were severely shaken. The only drawback from its complete approval arose from an apprehension that its machinery was not so simple, but that if disarranged or out of repair it would not be easily put right again. We should not omit to remark, that this plough is fitted with shifting moulds, so that it may be adapted to the land on which placed. Its draught, too, was but three to three and a half

feet, which was less than any other plough whose draught we heard of—some of them rising to five and five and a half. Messrs. Gibson, Newcastle, had a subsoiler on the ground constructed on the principle of the digger, but it clogged, and was a complete failure, owing, it was said, to the hurry with which it had been sent off, and the omission to attach scrapers.—The diggers exhibited did not embody any novelty of principle or so far surpass expectation as to justify lengthy observation. There were also Norwegian and drill harrows on the ground; and various grubbers and pulverizers, whose respective merits were recognized by the judges and need not be here specially distinguished.—About eleven o'clock the company began to thin, and gradually drew off to the show-yard, in which was the

EXHIBITION OF IMPLEMENTS.

There were 357 entries made under this department, but owing to circumstances not specified a considerable number of implements were not placed, or at least many numbers in the show-yard were blank. The implements were in much greater number than at the last show in Berwick, and of course were of vastly improved character; but so far as we could gather from the gentlemen on the ground acquainted with the later exhibitions of the Highland and Agricultural Society, the present exhibition is not quite equal to those of late years, and is also much inferior to the exhibitions at York. This is probably owing to the unlucky clashing of the Yorkshire Agricultural Society exhibition this week with the Berwick Show, and which our southern friends were not, we believe, very anxious to avoid. There was an especial deficiency in draining-pipes, tiles, and articles of that nature. The first row of implements on entering the yard consisted principally of ploughs, most of which had been tested in the field at Castle Hills. Next came Norwegian and other harrows, grubbers, pulverizers, &c., &c., many of them from the workshops of Mr. Crosskill, Messrs. Howard, and other eminent makers. For some of these we saw orders given on the field by local agriculturists, on the strength of recommendations by neighbors, and also from their favorable performance on the trial field. The class of turnip and straw cutters, and linseed breeders was fully represented; and haymaking machines, root washers, &c., which, although often exhibited at our agricultural shows, do not appear to make their way in this district, were here again in considerable numbers. There was also a large and varied assortment of drill sowing machines, many of which appeared to possess considerable merit as well as novelty. Stanley's, of Peterborough, Apparatus for Cooking Linseed, Hay, &c., which was exhibited by Mr. Thompson, of this town, attracted attention. Churns and Cheese Presses were in great variety. Bell's Improved Reaping Machine was on the ground, but of course the public had no opportunity of testing its merits on account of the crops not being forward enough for cutting.

We must not pass over the model of a Farm Stead, by Lockart Morton. This placed all the yards and premises of a farm under cover; and even a few of the corn stacks could be placed under roof, by means of a railway close to the feeding board of the thrashing machine. The model was calculated for a farm of 600 acres, and according to Mr. Morton's statement could be constructed for £1000. A very excellent Mortic-ing Machine was exhibited by a manufacturer in York. Among a numerous exhibition of Sheep-Washing Machines, Mr. Wilson's, of Coldstream, seemed the simplest and most efficient. There were also several beautiful Iron Gates from Glasgow. Of course many other implements were well worthy of notice, but we have said sufficient to show the general nature of the exhibition.

THE DINNER

Was, as usual, numerously attended, the utmost harmony and good-feeling prevailing. In the absence of the President, from domestic affliction,—the Duke of Hamilton,—the chair was taken by the Earl of Dalkeith, M.P.

We give as much space as possible to lengthened extracts from the speeches, which were, as a whole, of a very interesting and encouraging character, indicating unmistakably the tendency of North British Agriculture to be rapidly onwards.

The Earl of Haddington was very happy in his remarks in proposing the health of the "Clergy;" in connection with the health of the Chaplain of the Society,—the Rev. Dr. Grant, of Edinburgh, on whom the University of Oxford has recently conferred the honorary degree of Doctor in Civil Laws.—The Rev. gentleman replied as follows:—

DR. GRANT.—As having the honor to form the connecting link between the clergy and this great society, I beg to acknowledge with gratitude the toast that has now been given. The toast as explained by the noble Earl is a comprehensive one, and includes ministers of religion of all denominations. In particular it very properly includes my respected fathers and brethren of the English Church, within whose limits we are now met. Of them it may be there are some who would hardly have selected me as their representative, but it may in some measure disarm such if any there be, of their jealousy, when I say that for the Ecclesiastical institutions of England I entertain, and have ever entertained, the most heartfelt respect and the most hallowed reverence. (Cheers.) To all I would give the assurance that no word shall fall from my lips by which the feelings of the most sensitive may be wounded, or the views which any may entertain would seem to be compromised. (Renewed cheers.) My Lord, I hope I shall not appear to magnify unduly the order to which I belong,

when I say that this toast is a proper expression of your respect for our sacred character and calling, and I trust I may regard it as a pledge equally becoming in bodies of men as well as individuals to give, that all your schemes, albeit they may refer to matters of merely temporal interest, have been begun and will be carried on in the fear of God. The province of duty assigned to the clergy is not very different from that undertaken by this Society. We are charged with the care of the immortal interests of our fellow-men; but while alive as I hope, to the superior importance of our own high and holy vocation, our spirit is not so illiberal and contracted, or so unworthy of educated men, as to prevent us from appreciating the value of your patriotic labours. On the contrary, we acknowledge with gratitude your invaluable services, and we bid you all hail as fellow-labourers with us in the great and wide field of philanthropic exertions. (Cheers.) Of the manner in which the clergy have discharged their sacred trust it does not perhaps become me to speak, but we are willing that you should be our judges. The national character of a people, it has been well said, is moulded in the institutions under which they live. The churches in this land present to you the yeomen and the peasantry of England and Scotland, the tenant-farmer and the hardy tillers of the soil. They have long been under our charge, none know them better than you, and if you will find us men more upright, more industrious, more intelligent, more enterprising, take them all in all, more religious, more exemplary in all the duties of social and domestic life, more meek and uncomplaining when their lot has been cast in evil days, and some unforeseen calamity has disappointed the hopes of the husbandman—if you shall find us better men in any land then count us if you will to have been careless and unfaithful shepherds. In the welfare of these parties we never can fail to take a warm and lively interest, and hence it is that we cannot with sufficient gratitude repay the exertions of this high-minded and patriotic institution which seeks to promote the welfare of those who belong to it, and which this evening exhibits the comely spectacle of landlord and tenant as having one common pursuit and one common interest united in free and friendly converse, competing with each other how they may best promote the welfare of their common country.

The CHAIRMAN observed, in reference to the Highland Society, that it had now been in existence for eighty years, and instead of increasing in infirmity as it grew older, it was increasing in vitality and energy. (Cheers.) As a proof of this he might state that on a recent occasion no fewer than 153 persons had been admitted members of the Society in one day. One cause of its great success had undoubtedly been the great influx of the tenant-farmers of the country into the Association. These tenant-farmers had taken a great interest in the Society, and the local agricultural societies in connection with it, had contributed much to its success. (Cheers.) As a proof of the very high position which the body now held, he might mention that only last year it was

entrusted with the management of the statistical inquiry then instituted. That inquiry had been most successfully conducted, and its success was no doubt greatly owing to the services rendered by the farmers of the country. As to the occasion which had brought them together, he felt that it was unnecessary for him to expatiate on the character of the show; in the presence of so many men of much greater experience than himself, he would not presume to point out its particular features, but he was sure all would agree with him in thinking that it had been a most successful one.

Earl GREY, in proposing the Deputation from France, among other happy remarks observed: Gentlemen, you will also I am sure rejoice with me to have this opportunity to give a cordial welcome to the imperial deputation which is present on this occasion. (Cheers.) I hope and trust that they have been pleased with what they have seen, not only here but elsewhere, particularly at the recent Show of the Agricultural Society of England. I hope that what they have seen upon these occasions, not only of our progress in agriculture, but of the state of feeling towards France which has been exhibited on this occasion, as it was upon that, must have given satisfaction to our guests. [Applause.] Gentlemen, I feel that it is quite unnecessary that I should say more in recommending this toast to your notice, and I will therefore now conclude by asking you to drink Success to the Agriculture of France, and the Imperial Deputation now present.

M. YVART, President of the French deputation, replied to the toast in the French language to the following effect:—The deputation had been sent to Great Britain for the purpose of obtaining information respecting the agricultural exhibitions of England and Scotland, and to report upon the effects of those institutions upon the improvement of the agriculture of the country. The deputation had been much interested in what it had seen, and had admired many a time the agricultural stock of Great Britain. The French Government will introduce into its own exhibitions whatever is good in the proceedings that the deputation had here seen. He [M. Yvart] had heard with great pleasure the toast to the agriculture of France, because there is no country where the agricultural interests are greater than in France—where there are so many people—so large a population—connected with agriculture. And in France, if the farmers have a good deal to learn from their neighbours, there is notwithstanding, some good farming. In the north of France they might see good farming—farming that will compare with that of the best parts of Scotland. There is in France great application of the science of chemistry to the growth of beet root. With chemistry the French first got sugar from beet-root, and during the last few years they have also got good spirits, which, in consequence of the disease in the vines was much needed by commerce. In other parts of France they apply some good practises to the production of cattle.—though not by the means of turnips, but with some plant which is better adapted to their dryer

climate. This plant, which is extensively cultivated, and takes from a great depth the necessary moisture, is the lucerne. By its aid, the farmers around Paris are able to grow beautiful wool and good beef and mutton. He hoped that France will show next year at the great Exhibition that it also has good cattle and splendid merino sheep, such as the Scottish farmer would greatly admire. And he could assure them, that they would receive on that occasion as good and as hearty a welcome as that which had been received by him and the other members of the French deputation. (Cheers.)

Sir J. S. FORBES.—It is with great satisfaction that I have to propose a toast relating to the agriculture of the sister countries. Although this Society has long been engaged in promoting agricultural improvements in Scotland, its sympathies have been already warmly enlisted in the prosperity of agriculture in the neighbouring countries. And it is therefore, my lord with great satisfaction that I have to propose the Royal Agricultural Society of England and the Royal Agricultural Improvement Society of Ireland. These Societies have both adopted considerable portions of our system in their organization, and we have had the greatest satisfaction in co-operating with them and assisting them in following the course which we have so long endeavoured to pursue in this part of the country. Their success, my lord, had been quite equal to the energy with which they have carried on their operations, and they have certainly advanced with a rapidity proportioned to the power which they were enabled to bring forward in the cause in which they were engaged. (Cheers.) In England their shows have become proverbial as exhibitions which cannot be equalled in any part of the world, and in Ireland, where there was so much room for improvement at the commencement of the undertaking of the Great Irish Society, much has been achieved, and the progress of the Society has been most satisfactory. I regret that the noble Earl (Earl Grey) who lately proposed a toast to the meeting, has unfortunately been obliged to leave, or I should have coupled his name with this toast; I shall, however, now simply give the Royal Agricultural Society of England, and the Royal Agricultural Improvement Society of Ireland.

We make room for the following remarks of Mr. BAILLIE and Mr. AITCHISON, in reference to the tenantry of Scotland, and the Local Agricultural Societies. The former observed:—I acknowledge, my Lord, that it is with the greatest pleasure and the most heartfelt satisfaction that I rise to propose health and prosperity to the tenantry of Scotland. And in introducing the toast to your notices what can I say which is not already well known and acknowledged? Upon the whole habitable globe there is no body of men who have made for themselves so high a character for their skill, for their enterprise, for their perseverance, under difficulties, as the tenantry of Scotland, taking them as a whole. (Applause.) I am perfectly aware that I must be addressing many men who came from distant parts of the country, many in all likelihood who are tenants, and who

are farmers on the other side of that silver Tweed on the banks of which we are now sitting. And I would therefore say that I do not make the statement which I have made in any spirit of invidiousness or with any wish to raise any unpleasant feeling in their minds, because I, a Scotchman, choose to say that there are no tenants like the countrymen whom I am glad to say are my countrymen. (Applause.) If there is any one of you, if there is any Englishmen here who doubts what I say, who would wish to see the proof of what I have stated to you, I would ask all of you, gentlemen, to wander through the fields which lie on this beautiful river, to go along Tweedside, to visit the Lothians and to look at the grain crops, and to look at the species of Agriculture of which we in Scotland are particularly proud—our turnips—I would ask those who doubt my statement to go through these districts and when they return to me I am sure they would say that they found a country which was cultivated and which was farmed equal to many of the gardens that they had left behind them in England. (Cheers.) I have very little doubt that these gentlemen have all heard of Berwick and Roxburgh, and the Lothians, and they will say “Why you have chalked out the very best counties in Scotland, you have picked out the gardens of Scotland as specimens of the skill and enterprise and perseverance of Scottish tenants.” Well, I would say, come a little further with me towards Meellerstrain, and in that part of the county I will shew you land which was moors and mosses, a sort of country which by an English eye would have been said to be barren and unimprovable, and I will shew you where I used to shoot snipes and wild ducks, and where the plover and the muirfowl almost alone dwelt, the change which has been effected by the enterprise and by the skill and by the perseverance of the Scottish tenantry. I will shew as fine arable land as any one can boast of on Tweedside. But I will take you a little further, I will ask you to come with me to the land of brown heath and chaggy wood. I will ask you to come to the Highlands, and when you have thus seen Tweedside and Aberdeenshire and Skye, I will then believe that you will come to me and say, “Now I understand why you said that there was skill and enterprise and perseverance about the Scottish tenants which cannot be surpassed by any other tenants in the world.” (Cheers.) But I happen to have the honour of being a Scottish proprietor, and I am sure I may safely say that I only echo the feeling of almost every other, if not of every other proprietor, when I say that we regard every tenant dependent on us as our friend—(cheers)—for you will join with me, my lord, in the opinion that there can be no more highly educated, no more intelligent, active and spirited men than the Scottish tenants, take them as a body. As to the local agricultural societies, I will only say that they have been of the very greatest importance to the interests of agriculture, and I am persuaded that by continuing the course which they have adopted of giving premiums to the ploughmen they will promote in a very great degree the agricultural interests of the country. (Cheers.)

Mr. ARTHURSON, Linhope, in returning thanks, said—I feel almost ashamed to present myself on this occasion before so many distinguished men in this part of the country who have superior claims to acknowledge this toast. Unworthy as I myself am, however, I can most unhesitatingly claim a great deal for that body to whom I have the honour to belong. Though I cannot pretend to say that they so far transcend their brethren on the south side of the Tweed as Mr. Baillie has said, I will say this, that their public distinction and private worth entitle them to the respect of all classes of their fellow-countrymen. (Cheers.) By none can they be surpassed in loyalty to the sovereign and obedience to the laws, for general integrity of character, and respectful demeanour to their superiors. Nor are there more distinguishing features in the Scotch farmers' character than that patient endurance which they have evinced on all occasions when contending against bufftings of adversity, for then their energies never slackened, their spirits never quailed under their discouragement or adverse fortune. And should unhappily the prosperity that seems to have smiled on all classes of the Queen's subjects be interrupted by that war which has been frequently alluded to this night, then will I venture to predict that the farmers of this country will again show the same constancy—(cheers)—that they will as cheerfully as the first dignitaries of the land contribute their share of pecuniary support in giving strength to the strong arms of Britain when stretched out in the cause of the oppressed and in vindication of freedom. (Renewed cheers.) Many of the previous speakers have particularly alluded to the close union that this country has with France, and to the war in which we are embroiled, but I am sure there is no nobleman or gentleman present who will not also admit that there is nothing more calculated to consolidate and strengthen our union than landlord and tenant competing for the same honours in the same showyard, dining together in the same pavilion—(cheers)—and there exchanging their sentiments in a way calculated to produce that confidence and respect which no disparity of rank ought to discourage, and no conflicting public opinion disturb. Such a course is calculated to produce a salutary influence on society, far beyond what haughty superciliousness even could accomplish. (Cheers.) Mr. Baillie in proposing the health of the Tenants of Scotland spoke of the brown heath and shaggy wood, and about the moors at Meellerstain which have been brought into cultivation: but I am sure, gentlemen, nothing is more calculated to produce that congeniality of sentiment and reciprocity of conduct between landlord and tenant than unions of this kind, or more calculated to give an impetus to that progress of agricultural improvement which of late years had been carried on with a rapidity which baffles description and almost refuses comparison with any former period in the history of our country, and which year after year has presented to the eye of the passing stranger one vast panoramic succession of improvements. (Applause.) With such causes and with such unions as those to which I have alluded, I think

are intimately and primarily connected the bringing the fertilising produce of other climes to our shores, clothing those bare and precipitous hills with verdure, and transmuting the barren moors and waters into cultivated fields which are at this moment waving in all the luxuriance of autumn. (Cheers.) And this happy state of matters, is certainly the more gratifying as it is the more secure, now that the tenants of the country no longer lean on a broken reed, now that they no longer look to law-givers, but to lease-givers. (Cheers.) I hope then lease givers will ever consider that though they are the lords of the soil, it is the tenantry of the country who convey to them her treasures—they, in the language of Burke, are the Corinthian capital of polished society; we are the pillars which support the fabric; and if we from any cause should be injured, they also will be involved in the same ruin. (Loud Applause.)

The money taken at the doors on Thursday was about £623, of which £123 was in half crowns, the rest in shillings. This sum gives 10,984 paying visitors. There were probably about 2,000 other persons, such as members, exhibitors, &c., who entered the grounds without payment, so that the total number of persons who entered the show-yard on the principal day was about 13,000.

Mr. MAXWELL, the Secretary, submitted a comparative statement of the entries of the present and previous show in 1841, showing the great progress this Society has made within the last thirteen years:

	1841.	1854.
Cattle, - - -	175	175
Horses, - - -	96	141
Sheep, - - -	678	774
Swine, - - -	33	73
Poultry, - - -	0	261
Implements, - - -	60	357

GREAT NATIONAL SHOW AT ARMAGH.

(Abridged from the *Irish Farmer's Gazette*, August 12.)

THE annual show of the Royal Agricultural Improvement Society of Ireland was held, in the ancient city of Armagh; the place selected being the fine square opposite the court house, called the Mall, the central green being fenced off by rough high wainscotting, inclosing an area of several acres for the purpose of the show, leaving the broad promenades surrounding the square still available to the public. The area was most ample, and the internal arrangements the best, and most complete, of any that have yet been adopted at previous shows. A very fine fountain was erected in the centre of the yard, and the comfort and maintenance of the various animals amply provid

ed for, which were highly creditable to the parties engaged in designing and carrying out the exhibition. The show of short-horns was really a magnificent spectacle; that of the other acknowledged varieties was excellent, and in several cases very superior. Sheep were numerous, and numbered amongst them many highly bred and valuable animals, and pigs were so thoroughly bred, and so numerously superior, as to make it a task almost approaching the impossible, on the part of the judges, to make their awards, and to leave even our best breeders scarcely anything more to do in the way of improving our swinish multitude; the difficulty now appearing to be to keep them permanently up to their present standard of excellence. In horses were exhibited many excellent animals; and the poultry, though not numerous, presented very superior specimens of the most approved varieties. Amongst the implements were exhibited some of the best and most successfully-adapted inventions of the best makers in the three countries, several of them being new and local ones, which, in design and workmanship, were fit competitors with our friends at the other side of the Channel, particularly in field implements. The judges of implements proceeded with their inspection, and unexpectedly had a trial of ploughs in a field about a mile outside the city, the swing-ploughs selected being those of Ransome and Sims, Ipswich; Ritchie, Ardee; Clarke, Moira; Fleming, Monaghan; Gray, Belfast; Miller, Dunleer; Allen, Money-mors; the subsoil ploughs being Ransome's and Gray's. They also tried Gray's turnwrist plough, and a sevenbull harrow of Mrs. Jane McConnell's, Armagh. Our readers will gather a pretty correct idea of the character of the Show and the present state and prospects of Agriculture in Ireland, from such portions of the speeches given at the public Dinner, as our limit will admit.

The DUKE OF LEINSTER, President of the Society, proposed the health of the Lord Lieutenant, the Earl of St. Germans, when his Excellency observed:—I had great pleasure last year in meeting the members of the Royal Agricultural Society of Ireland on the shores of the Lake of Killarney, and I have equal pleasure now in meeting them in a less romantic but not less fertile and important district [hear, and cheers]. It is very agreeable to me to be present at this meeting, and to witness the progress which agriculture is making in this part of the country [hear]. Much of that progress is, I think, fairly attributed to the labours of this society, by

bringing together large numbers of the finest animals of every breed, and by collecting, I am afraid not quite an equal proportion but still many of the most approved implements of husbandry, and also for enabling the farmer to see and to converse with experienced agriculturists from any part of the kingdom, and to confer upon the farmer a benefit, the value of which it would be difficult to overrate. [Hear, hear]. But gentlemen, much as has been done in this way, if the agriculturists of the country wish that it should retain its present proud position at the head of the agricultural countries of the world, they must redouble their exertions [hear]. A noble friend of mine, who is present at this table, Lord Claude Hamilton, placed in my hands, the other day, a very curious and interesting account of the proceedings of a French commission appointed by the government of France, to visit the Great Exhibition of 1851, and afterwards to travel through the most important agricultural districts of Great Britain and Scotland. That account shows the attention bestowed by that country upon all the inventions and discoveries that are made in this empire. They give detailed descriptions and drawings of all the most recent machines and implements that have been applied to the purposes of agriculture in this country, and also drawings of the animals of various breeds which they conceive to be best adapted to the soil and climate of their country. I believe that other Continental states are travelling in the same direction, and are now convinced of the importance of increasing the quantity and improving the quality of the produce of the soil to the utmost possible extent. It must be borne in mind that in those countries they have the assistance of the government, and I believe the expense of the commission to which I have referred was entirely borne by the French government, and they also defrayed a considerable proportion of the cost attending on the introduction of new breeds of cattle, and of carrying into effect various agricultural experiments. Now, such an interference on the part of our government would be quite hostile to our feelings and wishes; but we have a resource in the co-operation and union of agriculturists among themselves, and to that resource we must look, if, as I said before, we would retain the position we now occupy as the first agricultural country in the world [hear]. I have adverted to the various ways in which the society has promoted the cause of agriculture in this country in the same manner as the sister societies in Scotland and England have furthered the same cause. But I trust my noble friend near me, and other gentlemen who are members of the council of the society, will not suppose I am in any way dictating to them, if I venture to offer one or two suggestions, which I hope will be received in the spirit in which they are made [hear, hear]. I have heard to-day, for instance, that the quantity of implements on the ground did not quite answer the expectations which had been formed. Nothing, I believe, could exceed the beauty and the perfection of the implements which were exhibited, particularly the one which we all saw with so much pleasure. I speak of the moveable

steam-engine and flax machine of the Messrs. Ransome, and some others; but, on the whole, I am afraid that the number did not equal the expectations of the members of the society, and I would venture to offer for your consideration whether additional encouragement to the makers of the implements might not be given [hear, hear]. It seems to me, at least, worthy of your attention, again, whether a premium for the best cultivated farm should not be offered. There may be difficulties in the way of which I know nothing, but I believe it might have a beneficial effect upon agriculture if a premium were given for the best cultivated farms. I say it with great respect, but I think I have seen in some parts of this district rather more rag-weed than is consistent with good farming, and that some of the gentlemen upon whose ground I have observed it, would hardly compete with success for such premiums [laughter]. I do not know how far it might be practicable to disseminate more generally, at a cheap rate, information among the practical farmers, by means of journals, tracts, and other publications communicating the results of the experience of agriculturists, in other parts of the kingdom. These are matters, I think, for the consideration of the council. There is one point, however, upon which I entertain a very strong opinion—namely, how important it is that the society should exert itself to promote, to the utmost, the cultivation of flax, so that the Irish manufacturer should not want an adequate supply of the raw material [hear, hear]. I have been informed, upon what I believe to be good authority, that the cotton-spinners of Lancashire are now engaged in producing an article of cotton by which they do or may compete with the productions of the linen manufacturers of Ireland [hear]. Now, gentlemen, I have a very great respect for the cotton-spinners of Lancashire. I conceive them to be a most intelligent and valuable body of men, and I am very far from speaking with jealousy of them, believing, as I do, that the prosperity of that great staple trade, the cotton manufacture of England, is most important to the welfare of the country. It is, therefore, in no spirit of hostility to the cotton spinners that I speak, but I do say, that I should be sorry to see the extension of that manufacture taking place at the expense of the linen manufacture of Ireland [hear, hear]. I think, however, that that must inevitably be the case unless the Irish agriculturists provide the manufacturers with an adequate supply of the raw material at a reasonable rate, I am aware that a most useful society is in existence, especially devoted to this object: but I would respectfully suggest to the council of this society to consider how far they might exert themselves in the furtherance of the same object [hear, hear]. There is one point to which my attention has been called, and which I may take this opportunity of mentioning. It is with regard to machinery and implements which are now becoming very generally used in agricultural countries. Many of those machines require rather more delicacy and nicety of manipulation in the use of them than it is at first possible for the agricultural labourer to possess, and the result is that

accidents not unfrequently happen, entailing sometimes loss of limb or life. Now, I think, if the council suggested to the very ingenious men who have devoted themselves to the production of those machines, that it is expedient that, as far as possible, guards, fences, and so forth, should be applied to those machines, they might render really an important service to an humble but really valuable class of their fellow-countrymen; and I am sure that a very small cost would be, in many cases, sufficient effectually to protect the lives and limbs of the persons having charge of those implements [hear, hear]. Gentlemen, now that I have no other suggestion to add to the rather long catalogue which I have offered, may I venture to congratulate you, which I do very sincerely, upon what I may, indeed, term the perfect and entire success of this exhibition [applause]? I believe that a larger number of cattle, and really finer animals, are exhibited now than were ever seen at any previous exhibition [hear, hear]. In the few observations which I made last year at Killarney, I ventured to express an earnest hope that the exhibition of this year would not fall short of the one present on that occasion, I am happy to think that my hopes and anticipations have been more than fulfilled. Not only has the present show not fallen short, but very considerably exceeded, both in quantity and quality, that of last year [applause]. That exhibition I believe was superior to the exhibition held in Gloucester, and I have not heard whether any comparison has been instituted, but I believe that in all important respects this may stand, at all events, upon an equal footing with the great show at Lincoln, with this single exception, as it seems to me, that there is rather a limited number of implements and machines; but I believe that in all other respects this exhibition has been entirely successful [hear, hear]. Before I conclude, may I, without touching upon ground which is most properly prohibited in this assembly, venture to congratulate you upon the state and prospects of agriculture? I say not a word about the causes. I look merely to the state of things, and I am happy to say that the accounts from all parts of Ireland respecting the condition of the three great classes of the country—the owners, the occupiers, and the labourers—are most satisfactory [hear, hear].

The Earl of ERNE, one of the Presidents, remarked:—Ireland has been blessed by Providence with one of the best soils, he believed, in the world, but they had not taken advantage of the gift; they did not cultivate the land as they ought, and one of the reasons, he maintained, why they were such bad agriculturists was, that their soil was too good. They merely scratched the soil, without dipping deep into the bosom of the earth. In England and Scotland the soil was properly tilled, and why should not Irishmen do the same? They were equal in commercial matters, if not decidedly superior, to the other parts of the country, and he could see no reason why they should not likewise excel in their agriculture. It made him rejoice to see that upon the whole the society was progressing rapidly in the estimation of the public, for within the last three years their

numbers were increased by 700. This society had, during thirteen years, done much more than either the Scotch or English society—that was to say, taking into account the amount of funds at their disposal. They brought over the best animals from the sister countries, and kept them here for breeding purposes for twelve months, and the result was, they were now able to compete successfully with English and Scotch agriculturists. They had also established branch societies, and had used their exertions to impart good, sound information to the farmers of this country. It had done much for the welfare of Ireland; and he trusted that the gentlemen of Ulster would give the old Ulster tug, which was, a long pull, a strong pull, and a pull together; and if they did, Ireland would soon be

Great glorious, and free,
First flower of the earth and first gem of the sea.

Lord CLANCARTY responded to the toast of the Royal Agricultural Improvement Society of Ireland—Notwithstanding what the Lord Lieutenant had said about implements, he should say that there had been an exhibition in that department, sufficient to show that there was a growing appreciation of improved implements on the part of the Irish farmer. He thought, however, that there could still be further improvement, which, he trusted, he would yet see. He saw before him the representatives of every creed and party, with the representative of royalty to cheer them on in their work; and he trusted that it would have the effect of pushing them forward in their exertions on behalf of the society. It was a most striking fact that, in the midst of a terrible war, they could carry on these social meetings with such success (cheers.) From the very grounds, perhaps, on which they then stood, had St. Patrick banished the terrible monsters which once infested this land—(hear, hear)—and he asked, had they not even now terrible monsters to banish from their farm-yards, replacing them by the noble animals they saw to-day—had they no thistles to banish, which could be replaced by the noble shamrock (cheers)? The record of what they would do in this respect would be seen on the face of the soil, and by the statistics of agricultural products; and he trusted they would not forget they had a duty to perform to themselves and to the soil of the country which had been placed at their disposal. He believed it was reserved for Armagh to restore its ancient name in literature. He had greatly admired its Observatory and Public Library, and he hoped that, when so much was done for knowledge, a great deal would be done for its promotion in respect to agricultural subjects (hear, hear).

Lord TALEOT DE MALAHIDE observed in reference to the national Agricultural Societies of Scotland and England, and the Royal Dublin Society:—He had not the honour of belonging to the Royal Agricultural Society of either Scotland or England, but he felt proud of his connection with the Royal Dublin Society. It was the first body that attempted in this country to combine theory with practice by introducing the practice of scientific agriculture. Having briefly, and in complimentary terms, alluded to the exertions of

the Royal Highland Societies of Scotland and England, his lordship went on to say that no person could question but the Agricultural Society of Ireland had done much in improving the country. With respect to the Royal Dublin Society, there never was a spark of rivalry existing between them (hear), and he trusted that for years they would continue to pursue their useful avocations. They were both exhibiting societies, and consequently had much in their power. In alluding to the Dublin Society, he felt bound to call the attention of agriculturists to the Agricultural Museum. It was an ample store-house of practical information, and no one could visit it without deriving benefit (hear, hear).

Lord NAAS, in proposing the Royal Flax Improvement Society of Ireland, observed:—It had for its object the improvement of the culture of a plant the most important known in domestic agriculture; it was the production of a plant which formed the raw material of their staple—he might say their only—manufacture. There was a time when the culture of this plant was of more paramount importance than at present, when they were engaged in war with a power and a country from whence they had been accustomed to draw a great portion of flax and flax-seed. It behoved the flax-farmer of the North, therefore, to put forth all his energies and endeavour to produce for the manufacturer as great a quantity as possible of the raw material. And it also behoved him to put in practice the new system of culture, by which means he could preserve the seed (hear, hear); for unless they could procure a greater proportion of seed at home, they might feel a difficulty in obtaining it from foreign countries. The association had already done good service in Ireland, and he hoped the day was not far distant when sufficient crops of flax would be raised to supply all the demands of the manufacturers (applause).

Viscount MONCK made the following pertinent remarks, in reference to the duties, qualifications, and influence of Judges:—Gentlemen, our exhibitions are not held merely for the purpose of rewarding men who produce a good beast, or for bringing to the test those feelings of emulation which are certainly calculated to advance the cause of agriculture (hear, hear). I hold that the principle object of our meeting is to create a sound standard of taste with reference to agricultural subjects—to foster that taste when created—to give the farmer an opportunity, as has been already remarked by the former speaker (Mr. Kirk), of comparing their own things with the things produced by other agriculturists, and thereby enabling them more effectually to form their opinion on the abstract taste and merits of their own animals (loud cries of hear, hear). These being the objects of our show, you can easily perceive that if the judges appear, from want of ability—from want of impartiality, or from any other reason—to give an unsound decision with reference to subjects committed to their adjudication—our shows, instead of accomplishing the objects which we have in view in holding them, will positively do injury; because if a judge awards a medal to an imperfect ani-

mal or production of any kind, instead of creating a true standard of taste in reference to that class of productions, he creates a false standard of taste, and induces men to compare their animals with the standard which, instead of giving them information, will positively do them injury (loud cheers).

Mr. WILLIAM TORR responded to the health of the Judges, and congratulated the assembly on the very splendid exhibition they had that day witnessed in the show-yard. He had visited many an exhibition in connection with their society, but he could with sincerity say this was by far, as a whole, the best he had ever witnessed; and most decidedly it was the best exhibition of sheep he had ever seen in Ireland (hear, hear). The show of implements at Armagh, however, did not come up to the show of animals in any way; and he thought it behoved the Royal Improvement Society to bestow some little portion of their funds towards effecting an improvement in this respect; for it was his opinion that, instead of giving medals and commendations for implements, a portion of their funds should be appropriated to giving prizes (cheers). It was very well for the extensive implement manufacturer, who could procure skill and labour in the market, to get a medal when money was not a matter of moment to him; but with the small manufacturers, a medal did not repay their labour, and a £10 note was more acceptable than any such token of superiority (loud applause).

The following facts relative to the celebrated Short-horn Cow, "*Butterfly*," owned by Charles Townley, Esq., of Burnley, Lancashire, will be interesting to our readers.—*The Irish Farmer's Gazette* gives a well executed wood-cut of this truly beautiful animal, and also of others that gave so high a character to the Armagh Show:—

"Charles Townley obtained the first prize, of fifteen sovs., with his far-famed cow, *Butterfly* also the Gold Medal, the Silver Medal, and Purcell Challenge Cup, which makes it the property of Mr. Townley. She is now five years old, and has, this year, with her two calves, won thirteen prizes in England and Ireland, and is again in calf. She has travelled upwards of 6,000 miles to the various shows, and won upwards of fifty prizes; she was, we believe, never beaten, and never looked better. Master *Butterfly*, her calf, took the first prize in his class at Lincoln."

THE SOUTHDOWN SHEEP SHOW AT BABRAHAM.

It has been well known for some time past that, for this season at any rate, Mr. Jonas Webb would not occupy his usual position as an exhibitor at the meeting of the Royal Agricultural Society. Whatever reason may have led to such a determination, it could scarcely fail to give additional interest to his own gathering, held, as announced, on Thursday last. Beyond the fact that this was the only opportunity for inspecting he picked animals of his famous flock, the visitor had good grounds for assuming that the show might be even better than it yet has been. There could be no reserve for the Great National Ex-

hibition of the kingdom, and thus many rams might come into the letting at Babraham, which under former circumstances, it would not have been politic to put up. Any anticipations of this kind were amply realized. There were never, we believe, so many sheep entered at the Babraham show; and never did those hired average a better price. We have thus an ample guarantee as to the continued excellence of Mr. Webb's sort; and this authority was, perhaps, of a more satisfactory character than it invariably has been. Ranging in some cases to extraordinary biddings, there was still wanting that go-a-head decision to have certain lots on any terms, which made the meeting of last year so especially remarkable. It is true, amongst the company we met at Babraham, on Thursday, America and France had both their representatives; the latter in two gentlemen officially connected with the advancement of agriculture in that country. These, however, unlike some of their predecessors from "foreign parts," were content to take rams, to be had at comparatively moderate sums. It was the home breeder who on this occasion contributed chiefly to the business of the meeting—it was he who gave the long prices—it was such men as the Duke of Richmond, Mr. Lugar, Mr. Hudson, Mr. Sexton, Mr. Rigden, Mr. Turner, and others, who, by their presence and support, afforded us some tangible proof as to the real merit of the Babraham flock.

Fashion, the ready servant of established success may always do much, as often enough stand answerable for more than can be really justified. This of itself, backed with a good word well applied, may tempt the untutored stranger to the highest flights; but this alone will never become authority. It is when we see "the Down men" returning here, again and again, for fresh blood, that we come to record the Babraham sheep as still the first of his breed—however altered or improved since his introduction to the flat lands of Cambridgeshire, one of the most renowned of the Sussex breeders readily admitted, that it was by the aid of Mr. Webb's breed he had only the other day been able to carry off all the prizes at a meeting in his own county.

The following statistics connected with the day letting may be not without their value for future reference:—

Let at the hammer, 75 sheep for 1,801 guineas, thus averaging about £25 4s. 3d. each; an improvement in every way upon former years, to be best gathered from the following table:—

	Number Let.	Average Price.
1851	62	£22 2 6
1852	69	23 3 1
1853	71	22 6 3
1854	72	25 4 3

The highest priced sheep was a yearling, one of the six picked of the whole flock. He was the second called in at the reserve price of 50 guineas, but knocked down to Mr. Lugar, of Hengrave, Bury St. Edmund's for 102 guineas. The highest price last year, and the highest price at which, we believe, a sheep was ever known to let, was 130 guineas, the buyer being an American.—*Abridged from the Mark Lane Express.*

NRW SYSTEM OF FARMING.

(From Rev. Mr. Smith's Pamphlet, on the Loix Weedon System.—Continued from Page 267.)

I have limited my subject to wheat; but I will go beyond it for a moment to state that, with one or two exceptional crops, the same principles should guide me throughout. I should have rotations; with root-crops, in large proportions; expecting the same success with them as I have hitherto had; and, with experience for my warrant, I should look for a produce from one acre, equal to a high average usual produce from two acres. All should be carted off with the quarter-cart; the interlining crops compelling me to this. Were the land suited for Sainfoin or Lucerne, I should grow that, as I grow wheat; with this difference, that it should be grown in double rows, two feet apart, with three feet intervals. Vetches and clover should be without intervals. If the land were adapted to clover, I should grow that, in rotation, separately; and with trenching and gradual exposure of the subsoil and suitable dressing, I should have no fear of clover-sickness in the soil.

The point I have in view, however, is, pre-eminently, wheat. For if, on wheat land, this crop—at 35s. or 40s.—can be grown at a profit to the proprietor of from £7 to £10 and to the tenant, with a rent of 40s, from £5 to £8 per acre, it is manifestly the most important and most precious crop he can take.

Selecting, then, out of my 400 acre farm 100 acres, the best suited for the purpose, tolerably level, and if possible in fields adjoining each other, I set them apart exclusively for wheat.—For, there are these advantages in such a separation,—that they are, as I suppose, the most suitable fields for the most valuable crop; and that the somewhat difficult operation of first setting out the 5 feet lands with accuracy, once done, is done for ever.

I am entering now on a business of great moment, demanding and repaying with interest all the care and attention I can give it; for, if I proceed with judgment, my net annual profits from these 100 acres will be, year after year, from £700 to £1000.

I ascertain, then, first of all, what food or manure it is that the wheat crop requires, and how much per acre. That point I find determined for me, and that a certain quantity of organic substances is necessary, and that other ingredients besides, of mineral origin, are equally indispensable for the perfect formation of the plant. These substances, then, must be provided; but how?

With regard to the source of the first—the organic portion—it is evident now that Tull was right, and can be safely followed. His theory was, that by a peculiar management of the soil, he derived from the atmosphere a sufficient and endless supply of nourishment for his wheat crops. Too happy had he been had he known his wealth! He knew it not, however, by actual analytical proof, but still he clung to his belief—prophetically, as it were—with a pertinacity as strong as to a settled fact.

The fact has now been proved, that the atmosphere does contain every organic constituent of the wheat plant, and is able to afford to land, duly prepared for its reception, an abundant supply of each. The only doubt, as regards abundance, is in the case of ammonia. It is difficult, nay, impossible, to arrive at the actual entire amount of that substance contained in the atmosphere and brought down on the soil; but an approximation can be made, from known experiments, which is close enough for our purpose.

Taking Dr. Fownes' revised estimate* of the annual amount of rain which falls on an English acre of land, the sum will be 5,096,520 lbs. Each pound of rain containing $\frac{1}{4}$ grain of ammonia, in round numbers the amount of that substance will be 182 lbs.

Now, it is asserted by a high authority in these matters, that a bushel of wheat contains 1 lb. of nitrogen; and that, so great is the waste in furnishing this 1 lb. of nitrogen, that the surprising weight of 5 lbs. of ammonia (equivalent to about 4 lbs. of nitrogen) is required for the supply. As wheat land has been proved to have the power of absorbing and retaining for use whatever ammonia may be in excess, it is an unexplained mystery how this can be; unless indeed, we receive—as we may well be tempted to do—the original and most ingenious solution of Professor Way, that the lost treasures have been engaged in conveying silica to the straw, and so been "wasted in the act."

Granted, then, that such is the case,—that 5 lbs. of ammonia are demanded for the service of each bushel of wheat, and supposing the crop to be 35 bushels, the required amount of ammonia per acre will be 175 lbs.

But, the rain provides somewhat more than 182 lbs. per acre, so that from this source alone there is more than enough for the wheat crop by several pounds.

Besides the rain, however, there is the snow and the fertilizing dew. How much unmeasured and immeasurable ammonia does the dew drop down? The air, too, itself, with its never-ceasing impregnation of the porous soil?

Allowing it to be possible, and even probable, that from all these sources together a quantity of ammonia is conveyed to the earth, equal to that which comes with the rain, there will then be, not merely a sufficiency, but, to a large amount, an actual redundancy of ammonia for the wants of the most spendthrift plant.

Tull, then, was right, and happier than he knew. For there, above, is indeed a reservoir, rich and inexhaustible, and ready to bless the well-tilled, expectant soil. Well worthy of remark, too, is the way in which these treasures fall. Unlike the distribution of earth-made manure, here a little and there a great deal, a mass in one place and a sprinkling in another, the benevolence of heaven is equable and diffusive, and spreads over the whole surface of the land alike, producing at harvest—where no remains are left of former irregular dressing—that even—

* Prize Essay "On the Food of Plants," Royal Agricultural Journal, vol. 4, p. 522, Note.

ness of growth which is so desirable and so beautiful to see. On all lands, whether light or heavy, it falls alike. But on pulverized clays,—in compensation, as it were, for their more laborious and costly cultivation,—it not only falls, but is retained and accumulates, and brings heavier crops. If, however, the light land farmer, with his more porous and unrelentive soil, is denied this advantage, at least to its full extent, he will gratefully recollect that this manuring from the air is *continuous*. All the nourishment is not given at once or at twice, but is falling ever, and so can be taken up by his growing crops as it falls, and before it is carried away.

To those who allow—as they must do—that for plants in a state of nature there is an abundance of atmospheric ammonia, but deny this abundance to plants, like wheat, in their present state, I would say, with submission,—Treat the soil as I treat it, cut off from it the entailed curse of thorns and thistles, deepen it, make it friable, enrich it by exposure, and its condition will be equally artificial with that of the plant it supports.

I am provided, then, with one portion of the food or manure which the plant requires, namely, *the organic portion*, and if I but do my duty and fit my land for its reception, I have it in such proportions, spread it so equally, and given so continuously, as to surpass all the richness and all the labor bestowed on the soil by the hand of man.

But something else is wanting, equally important and indispensable. The rain and the dews, the air at a time snow bring with them no *mineral food*, and without that the plant never reaches perfection. Of this food Tull took no account, and could give no account. And if the inferior land, on which he grew his thirteenth unailing crop without manure, still gave out its supply of mineral matter, it was fortuitous,—unthought of, and unacknowledged, and must have come from his perfect and entire disintegration of the soil by tillage and exposure; and this supply, with all his good husbandry, must soon have reached its limit. For his practice was, never to go beyond the staple to move the subsoil.

We live in more favored times. We know now, by analysis, the composition of the wheat plant, and that food must be found of the same nature with itself, to make up its ingredients—We know, for example, that its chief mineral ingredients are silica sulphate of potash in the straw, and the phosphates of potash, magnesia and lime, in the seed. No matter, then, how or whence they are procured, whether from the yard, the shop, or the soil, these substances are the same, and must be had. Does the land I have chosen for wheat possess them? I examine its texture, and find it varies; and that some parts are light, others heavy. It is well with the outlay, then, and—as closely as that can be done—I have it analysed. The light land proves not to be wheat land; that is, the mineral constituents of wheat are absent, or only partially present. They must be all found there, however, in quantities adequate to the demand. And, I must either take this course: supply them from the yard—a costly and lavish procedure, overloading

the land with much that is useless, supplying what is wanted *unequally*, and *entailing* a heavy expense in the doing of it;—or, I must meet the special wants of the plant by special manures, easily applied, and with greater evenness and economy.

In deciding on the latter, I do not forget the balance sheet; and that the cost of the purchased dressing will reduce the profits by so much, perhaps £1 per acre. But it is a merited penalty I willingly pay for an ununsuitable crop on light-working land; for the grain per acre is still from £6 to £9.

I next try the heavier land; and there I am safe. For, if it be so that the clay and the loam abound in the substances required, I need go no farther. To all intents and purposes the manure is already there; and, if I add more, it is simply superfluous and extravagant.

Now, it has been shewn to demonstration that wheat land does contain them, in most cases, in such abundance as to be practically inexhaustible.

Specimens of soils from five different farms were taken to Professor Johnston for analysis.* The phosphates and alkalis—in their small comparative proportions—are always present in clays and loams. But a vast weight of silica is required for a good crop of wheat; and it was found that four of the analysed soils, at only 12 inches in depth, would furnish enough silica for 900 crops, and the fifth enough for 3,000 crops. But I trench by degrees twice twelve inches deep. In the first four cases, therefore, the number of crops would be 1800; and in the last, 7,200 crops.

I do not say that there is this amount of inorganic ingredients for the wheat, in their several proportions, in all clays and loams; for they vary exceedingly. But, setting aside altogether the few utterly bad clays and worthless subsoils that exist, and allowing in others a variation to an enormous extent,—reckoning also the amount of silica required for each crop to be understated by Professor Johnston,—it will come to this: Reducing these 7000 crops to 1000, or lower and lower still; and these 1800 to 500, or still lower than that; it will even then corroborate the statement of our great chemical authority, and confirm my belief, that “There is an almost unlimited supply of the mineral requisites of plants in soils”; and that “It is possible, from their universal prevalence, that sufficient working of the soil may enable us to dispense with any artificial manures.”

Here, then, is all I want for the sustenance of my wheat crops. And here, too, I will add in conclusion, there is the one great point on which the accident of living in a happier age, has enabled me, with infinite advantage, to differ in practice from Jethro Tull. By means of the deep-stirring, uplifting fork, in lieu of the glazing and level plough, I bring up these mineral treasures, inch by inch, to be disintegrated and decomposed by the summer-fallow; exposing them gradually year after year, till I reach the limited depth of

* Prize Essays of Highland Agricultural Society, vol. ii. p. 104.

two feet; beyond which it is neither needful nor convenient to go. The time may come, however,—some think it not far off,—when the resolute hand to wield the fork may fail me. I make little account of this year's deficiency of hands, when all the harvest ripened at once. Nor do I fear that, with fair wages at home, our home-loving husbandmen will be tempted, in any draining number, to cross the seas. But, I may err. And, if I do, I doubt not for an instant that the want will be met. A sharpening of the wits, an exercise of all the ingenuity with which Providence has gifted the mind of man, will be "a necessity of the times in which we live." And if the fork is to give way, it will be to something hitherto untried, and of equal, or perhaps superior efficacy. What will that something be? The space to be tilled in the intervals is barely thirty inches. It could not be wider; for the yield would then suffer in bulk. Were it narrower, then even the fork could not work. There is no hope in the plough; nor in anything plough-like. Nor will the subsoiler do; that only stirs, and does not displace, or bring up. Is there no tool to do as the mole does? Look at the operations of the cultivator mole. See his neat process as he burrows. Watch him as he works down into the earth, tearing it, and bringing it up, claw-full after claw-full; and how he throws it behind him, granulated, under soil uppermost, on the surface. The process is perfect, and just what we want. But, is it inimitable? Is it beyond the wit of man, with steam, and the whole power of dauntless mechanism at his command? I can readily conceive, within the bounds of the most sober and rational expectation, an implement such as this:—The land to be cultivated is thirty inches in width. The body of the machine is suspended over this land on four large wheels, each pair of wheels being four feet apart, and resting on the intervals. The working part of the implement is circular, and revolving, with strong claws, so formed as to enter the soil, to bring it up, and to drop it. The moving power is steam, which moves it with a motion quite independent of the wheels. I see it at work; as I saw the mole work. I watch it as the claws first enter the ground; I see them tearing their way, slowly, but most surely; and how, claw-full after claw-full, the soil is thrown backward and dropped, tilled at one process, with the crumbled subsoil left, partly mixed, on the surface. I see all this, not as a pleasing and empty vision, but as a substantial reality. And I should be doing little justice to my own feelings, and to the genius and originality of him* who first placed such a design before the public, in the pages of the *Agricultural Gazette*,[†] if I did not give utterance to my conviction of its vast importance, and of its entire eventual success. The mole-cultivator—if I so may call it—is already in model. Every point has been well considered by its gifted inventor; and beyond a question it will be forth-

coming when that threatened necessity of the times demands it.

The Implements in use already for economizing labour on my plan, are described in the following pages. Besides these, the width of the intervals between the wheat has suggested another simple means of extending the economy of labour.—Adapting to my scheme what appears to me to be the best known principle of Reaper, and adding to it one little improvement to make the process easier and truer, I am having a machine prepared, at very little expense, light, easily worked with a single horse, to cut one land of triple rows of wheat at a time. This space of land, together with its interval, is five feet wide. So that, in reality, I shall thus reap a superficial acre with almost equal speed with the widest Reaper in use.

PREPARATION OF THE SOIL FOR WHEAT, GRAIN, AND OTHER CROPS.

Those who intend to put their fields down to grass and grain, should remember that the length of time in which they will remain profitable in grass, must depend materially upon proper mechanical preparation of the soil. They should recollect that deep plowing is now the order of the day, and not as a mere matter of fashion, but from the well-ascertained fact that deeply disintegrated soils will furnish a larger amount of pabulum for plants than those which are surface-worked. Where the roots of plants can travel readily, they must of necessity come in contact with a greater amount of surfaces of particles, and therefore, receive a larger amount of those materials which have been rendered suited to their use by the action of Nature's laws. They should remember also that in deeply disintegrated soils the grains and grasses never suffer from drought; for in such soils, the condensation of moisture from the atmosphere, circulating at a greater depth, must protect the plants from those risks consequent upon the absence of a proper amount of moisture, and the presence of this moisture, not only conveys such pabulum as the plant requires, placing it in a condition to be appropriated, but also supplies the conditions for the more rapid chemical changes, which should continue to take place upon both the organic and inorganic constituents of the soil during the growth of the plants. To secure these conditions, then, we should not only plow the surface deeply, but follow in the same furrow with the sub-soil plow, disintegrating it to a great depth, slightly elevating it, and thus supplying the means of getting rid of excess of water during floods, and securing a continued supply during drought. This sub-soiling is absolutely necessary for the more profitable culture of those crops which are called *tillering* crops; and among these will be found the grains and grasses.—Every farmer knows that a single grain of wheat will throw up many shoots, and that these arise from tiller roots thrown out from the crown of the plant; and he also knows that if any one root of

* "The Chronicle of a Clay Farm," by Talpa. These papers, so infinitely amusing and instructive to the farmer, are now republished in a separate volume, with much new matter on Cultivation by Steam, and especially on the implement in question.

that plant has found its way down to the sub-soil, and has come in contact with the cold and not disintegrated portions, that the termini of that root will turn brown, become sickly, and the plant will cease to tiller. It is for this reason that shallow plowed meadows run out, and it is for this reason also that sub-soiled meadows never run out. Let those who doubt this fact look at the grass growing over an old post-hole that may have become accidentally filled up. Plants will continue to tiller in such a situation, long after the average surface of the meadow has ceased to replace itself.

We should also be sure that the right amendments are added to the soil. We should know that the leading constituents of our crops, particularly those of an inorganic kind, are present in sufficient quantities, and if they are not, they should be added before putting down a crop intended to occupy the soil for many years.—*Working Farmer*.

TIME FOR CUTTING BUCKWHEAT.

It is hard to give a precise rule for the best time to cut buckwheat. The grain continues to ripen successively, and while most of the stalks remain green or succulent, these grains will not drop off. It is therefore best to let the crop remain as long as the amount continues to increase by successively ripening portions. But as soon as the plant loses its fresh appearance, and the first ripened portions are found to separate easily, no time should be lost in cutting. The rule with some farmers in the north, is to allow the crop to stand till the first light frost, and then cut as quickly as possible, before the shelling process commences. But when frosts do not come early, it is cut before. As soon as the stalks are dead or dry, buckwheat threshes with great ease, but not before; hence the reason that when but partly dried, it is often found so difficult to thresh. At the north, it is usually sown during the early part of summer, sometimes nearly as late as midsummer; if sown too early, the grain does not set well.—*Country Gentleman*.

THE "ECONOMICAL MANURE."

For some time past there has been used to some extent in England and Scotland, an artificial manure, to which the above title has been given. If testimonials are to be relied upon at all, this manure *must* be possessed of very desirable properties. In the month of May last it was analyzed by a competent chemist in Edinburgh, and found to be composed *mainly* of, 1st. protosulphate of iron, or green vitriol, about 35 per cent; 2d. of sulphate of lime, or gypsum, about 16 or 17 per cent; and 3d. of chloride of sodium and other alkaline salts, about 26 to 34 per cent. In one specimen analyzed the chloride of sodium amounted to 16.31 and the other alkaline salts to 10.66, or in all 25.97 per cent, and in another specimen to 17.43 and 16.88 respectively, or in all to 34.31 per cent.

Now, as a manure of such a composition might be easily and cheaply got up by any agriculturist, we subjoin a specimen or two of the testimonials which have been given of its fertilizing properties. One testifies that on that portion of a field of barley on which this manure was sown broadest, mixed with ashes, the growth of the barley was wonderfully thick and luxuriant to what it was on the other portion of the field. Another testifies to its having most beneficial effects on his garden crops, and to his cattle being very partial to a part of a field of grass to which it had been applied. "Your manure," says Mr. John Davenport of Staffordshire, "improved the wheat very much, and the grass it sweetened, and the cows eat it off very bare all the summer." "Your manure," says one, "was sown with clover, and it is most luxuriant."

It is called the "economical manure," because $\frac{1}{4}$ to $\frac{1}{2}$ cwt., per acre fully equals in effect 3 cwt., of the best Peruvian guano, and because the saving in cost is thus at least 50 per cent. It is applied with two or more times its bulk of light earth or peat-mud, or ashes or sawdust or anything of that kind, broadcast. It has been also employed in solution. In this state we presume it was applied to some apple and pear trees, of which it is said to have improved both the foliage and the fruit. We may close by stating that it is sold in Great Britain at about or a little over the price of the best Peruvian guano, that is about £12 per ton.—*Country Gentleman*.

NIGHT-SOIL, ETC.

We commend attention to this subject, and invite our readers to notice the following from the volume recently published by Prof. Nash:—

In European countries, as also in some of our cities, this has been wrought by various processes into a dry, portable, inoffensive, but very powerful manure, under the name of pound-rotte. This is one of the forms in which the fertilising agents of the city are returned to the country, whence they came.

On the farm the night-soil may be put to good use in a less troublesome way. After being carried off in the spring—or better, in the latter part of winter, while it is yet cool—the bottom of the vault should be covered, at least a foot in depth, with fine black peat or mud, previously prepared and dried for the purpose. A little of the same should be thrown down daily through the summer, and once a week or fortnight during the winter. If plaster be occasionally added, it will be well, though this is not essential. The peat itself will be sufficiently *deodorizing*, if put down in such quantities as to be kept fairly moist and no more. It will withhold all foul odor. It is well to have an opening in the rear of the building, and a pile of prepared peat lying near, that it may be thrown down without much trouble, lest it be neglected. Good farming requires daily attention to many little things, and unless a previous preparation for them be made, these little things, important in the aggregate, are apt

to be lost sight of. A farmer might better bring peat several miles for the foregoing purpose than not to have it. In an ordinary family, as many as five loads of a kind of poudrette can thus be made, not as concentrated nor as portable as the article bought under that name in our cities, but sufficiently so for home use, and excellent for any soils except peaty, and for any crops except it may be for potatoes and other roots. For cabbages, wheat, corn, or clover, it would be first-rate. If used for corn, and especially if used as a topdressing for old mowing, it would be well to apply plaster plentifully with it. I know of nothing that will bring up red and white clover on an old mowing like it.

Many families make use of chloride of lime as a *deodorizer* or *disinfecting agent* about the privy. They pay for it in ten or twelve cents a pound; and, at that, it is ineffectual unless used in considerable quantities. Peat is cheaper and better. When peat can not by any means be obtained, black, vegetable mould from the edge of the wood, or wherever great quantities of leaves have drifted together and decayed, will answer. If this cannot be obtained, there is a sort of home-made chloride of lime, which can be prepared easily, and is worth more for agricultural purposes than it costs.

To prepare it, take one barrel of lime and one bushel of salt; dissolve the salt in as little water as will dissolve the whole; slack the lime with the water, putting on more water than will dry slack it, so much that it will form a very thick paste; this will not take all the water; put on, therefore, a little of the remainder daily, till the lime has taken the whole. The result will be a sort of impure chloride of lime; but a very powerful deodorizer, equally good, for all out-door purposes, with the article bought under that name at the apothecary's, and costing not one-twentieth part as much. This should be kept under a shed or some out-building. It should be kept moist, and it may be applied wherever offensive odors are generated, with the assurance that it will be effective to purify the air, and will add to the value of the manure much more than it costs. It would be well for every farmer to prepare a quantity of this and have it always on hand.

Again, he says:

Night-soil should be removed to the land every spring. Its value, as a fertilizer is greatly increased, if mixed with six or eight times its bulk of dried peat or swamp mud. Its value would be still more increased if the peat or mud, in a dry state, could have been thrown in with it daily, or once in a few days during the previous year; and this either with or without (better with) a little plaster, would have prevented the smell from that source, which is too often noticed about premises. *Poudrette* can be prepared in this way at little expense, and quit as effective as much that is offered in market at a higher price. Night-soil is valuable for grass-land, and for all kinds of grain. In whatever form it is used, it should be spread thinly over a large surface, rather than be put in large quantities in one place.

There is another article to which the last remark applies with great force. It is old plastering from the walls of rooms. This contains silicate of lime, and what is of more value than all the rest, *nitrate of lime*. This last is a very soluble salt, and is so valuable for any of the grain crops, but more especially for wheat, that not a particle of it should be lost. Every ounce of old plastering should be put upon the field. Even the rubbish of old brick walls should be pounded up and put upon the land. But this and old plastering should be spread thinly over a large surface. Probably a ton of either, if mixed with a compost that was to cover five acres, would benefit the first year's crop more than five tons spread on a single acre.

Whether the new occupant of this farm should go largely into the use of plaster, is a question for him to settle on the ground. He should, at any rate, have some on hand to use about manures. There is a strong presumption in favor of plaster on a farm upon which nothing is known of its effects by experience. He should inquire of his neighbors. If their testimony is against the use of plaster in that region, *let him not believe it*, but let him make the trial for himself. He may make it on a small scale at first, so as not to injure him much if it fails. If, on the other hand, the testimony of the neighborhood is favorable to the use of plaster, he might take it as undoubted. A hundred neighborhoods have testified falsely against the use of plaster in their particular location to where one has over-estimated its value. Very few are the locations where plaster is not worth the purchase-money, or more.

It is very true that plaster cannot be relied upon alone. It is not a manure in the fullest sense of the word. It contains but two ingredients, and those are not all that plants need. Plants could not grow in plaster alone, but that does not prove that they should have none. The truth is, *it acts partly as a manure*—feeding the plants with its sulphuric acid and lime, the very ingredients which clover, corn, potatoes, and some other crops, largely require—and *partly as a stimulant*—hastening, by its lime, the decay of vegetable matter in the soil. In other words, *it feeds the plant a part of their food, and it hurries the vegetable matter in the soil to feed them more*. On dry soils it performs another important office—that of *attracting moisture*. Some say it has not this effect. I know very well that in its unaltered state it has not. Set an open barrel of plaster in the air, and it will remain dry. But it does not long remain unaltered about the roots of plants. The sulphuric acid and the lime part company, and in their transformations they perform the three offices I have described—*feed the plants, convert half-decomposed matter into vegetable nutriment and attract moisture from the air and from the sub-soil*. This last office is important on lands that are dry. On wet lands it should not be used till they have been thoroughly drained.

Plaster will not do well permanently without other manure. It requires that organic matter should be present. In pastures, this is supplied by the droppings of the cattle and by the

decay of grass roots. On mowings, it should be supplied to top-dressings; and on ploughed lands, by harrowing in manure. It would be as unreasonable to complain of plaster because it will not act well always without other manure, as to find fault with roast-beef because it does not afford a suitable diet without other food. The same might be said of ashes. Land dressed with ashes alone, will soon be found in a sad condition; and yet the potash, soda, and lime they contain, are worth far more for agricultural purposes than the price generally allowed by soap-boilers. Their alkaline salts act favorably upon the silicates in the soil; they render insoluble silica *soluble*, and are therefore valuable on uplands; while on peaty lands, if well drained, and on any lands which abound in inert vegetable matter, their value is very great.

CONSTRUCTION OF CISTERNS.

In consequence of the repeated inquiries we receive for information relative to the best construction of rain-water cisterns, we are induced to furnish some brief practical hints on the subject. The great value of an abundant supply of water to houses and barns, and which may be easily had by providing capacious cisterns, renders it important that the cheapest, best, and most convenient mode of construction should be adopted.

The two all-essential requisites for underground cisterns, are good hydraulic lime, and a supply of clear pure sand. These must be selected from experience or trial, or by choosing such as have already proved efficient for this purpose. Good hydraulic cement will in the course of a few months become about as hard as sandstone. When this hardening process does not take place, it must be attributed to bad materials, or to intermixing in wrong proportions. On the latter point, some are misled by adopting the practice employed in mixing *common* lime mortar, the hardest material resulting in this case where the sand constitutes about five-sixths of the whole. But the hardest *water-lime* mortar cannot be made if the sand forms much more than two-thirds of the whole.

A very common and a cheap form for the cistern is to dig a round hole into the ground with sloping sides, somewhat in the form of a narrow-bottomed tub, and then to plaster immediately upon the earth. Unless a slope is given to the sides, the mortar cannot be made to keep its place while soft, as it is nearly impossible to find a soil dry and hard enough to retain the plastering by simple adhesion. The top of this kind of cistern must therefore be wide, and consequently difficult to cover very large ones effectually and substantially. The covering is usually made by stiff and durable plank, supported if necessary by strong scantling, and over this is placed about one foot of earth to exclude completely the frost. A hole with a curb, about eighteen inches by two feet, must be left in this covering, for the admission of the water pipe or pump, and to allow a man to enter for cleaning out the cistern when

necessary. In cold or freezing weather, it is indispensably requisite to have this hole well stopped to exclude frost, which would otherwise enter the wet cement or walls, and produce cracking and leakage—a frequent cause of the failure of water-lime cisterns.

This is the cheapest form of such reservoirs, but a better, more capacious, and more durable mode is to dig the hole with perpendicular sides in the form of a barrel, and build the walls with stone or hard brick, to receive the plastering. In consequence of its circular form, operating like an arch, these walls will not be in danger of falling if not more than half the ordinary thickness of similar walls. For large cisterns they should be thicker than for small ones. The walls should be built perpendicular until about half way up, when each successive layer should be contracted, so as to bring them nearer together, in the form of an arch, reducing the size of the opening at the top, and rendering a smaller covering necessary. If the subsoil is always dry, or never soaked or flooded with water, the walls may be laid in common lime mortar, and afterwards plastered on the inner surface with the cement. But in wet subsoils, the whole wall should be laid in water lime. If the bottom is hard earth or compact gravel, a coating of an inch or two may be spread immediately upon upon the earth bottom; but in other instances the bottom should be first laid with flat stone, or paved with round ones, the cement spread upon these.

The plastering upon the sloping earth walls as first described, should never be less than an inch thick, and if the earth is soft, it should be more. On the stone or hard brick walls, half an inch will be thick enough.—Cisterns can rarely if ever be made free from danger of breaking, without giving them at least two successive coats, and three will be safer—the previous coat in each instance being allowed to become dry and hard.

As the best mortar begins to harden in a very short time after mixing, it is best to mix the lime and sand *dry*, and to apply water to small successive portions as wanted.—*County Gentleman.*

ITEMS ON POULTRY.

THE POULTRY HOUSE.—As every thing connected with poultry now-a-days has a peculiar interest, we give the following sensible remarks from an English paper. First of the roost and nest house. The floor should be sprinkled with ashes, or loam, or pulverized peat, or fine charcoal, and the floor should be cleaned off every week:—

“The yard should contain a grass plat, some fine gravel, slaked lime, dry ashes, and pure water. The nests should be lined with moss heath or straw. Evidently the Dorkings are the best breed; they will lay an average of 185 eggs each per annum. Fowls with black legs are best for roasting, while those with white legs are best

for boiling. If you want them to sit early leave the eggs under them. Fowls in their native habits never lay more eggs than they can hatch. Remember that no success can be expected from poultry-keeping if their houses be damp, cold, unclean, or badly ventilated; if their food does not approximate to that which they get in a state of nature, viz., a mixture of animal and vegetable food; if the water they drink be stagnant, the drainage of the manure heap, &c., or if the strongest and handsomest be not bred from."

Nests.—Hens exhibit peculiar fancies about nests, which, like our watering places, suddenly become all the rage at one time, and pronounced unfashionable at another. Out of about ten nests in my own house, but three are at present popular, why, or wherefore, I know not, as they possess very different qualities. One of these is in a cold corner on the ground, the second is in a window exposed to light and heat, and the third is situated in a dark nook in an iron pot. Although I am of opinion that nests had better be left an open question for the consideration of the hens themselves, I will give my ideas on the subject. Of all materials usually employed in their construction, I think heather or straw the best. Hay is bad, as it soon generates insects of a kind 'not to be mentioned to ears polite.' My own experience is in favor of shallow holes in the floor, loosely lined with a little clean straw, and I have almost invariably found that the largest and strongest broods are hatched on the ground.

TO PREVENT HENS EATING THEIR EGGS.—Watch the hen when she goes to nest, and remove the eggs immediately. If this is done for a day or two, she will discontinue the practice. Let there be some bricklayer's rubbish thrown down in their haunts—old ceilings, mortar, &c. Generally speaking, a hen first eats the egg for the sake of the shell. An old remedy was to blow an egg, and fill it with mustard, pepper, ginger, or anything distasteful to the bird, and put it in her way.

FEEDING POULTRY.—Professor Gregory, of Aberdeen, in a letter to a friend, observes: "As I suppose you keep poultry, I may tell you that it has been ascertained that if you mix with their food a sufficient quantity of egg shells or chalk, which they eat greedily, they will lay twice or thrice as many eggs as before. A well fed fowl is disposed to lay a large number of eggs, but cannot do so without the materials of the shells, however nourishing in other respects her food may be; indeed, a fowl fed on food and water free from carbonate of lime, and not finding any in the soil, or in the shape of mortar, which they often eat on the walls, would lay no eggs at all with the best will in the world."

QUALITY.—In order to give 'quality' to the plumage particularly on special occasions, as a poultry exhibition, boil half a pint of linseed in a quart of water until it is reduced to a pint.—Pour the seed and liquid over as much meal as will absorb it, and give this every other day for a fortnight to your pen of birds, i. e., a cock and two hens.

KILLING FOWLS.—As fowls are to be killed for the table, it may be as well to point out a merciful way of destroying them—a point on which few concern themselves. Fowls are never bled to death (like turkeys and geese) as, from the loss of blood, the flesh becomes dry and insipid. Poulterers and higglers either strain at the vertebra of the neck till their dislocation takes place, or produce the same effect by a sudden twist.—The former mode is very cruel; the second plan is more merciful, but is not always skilfully managed, and requires considerable dexterity. The best plan is to take a blunt stick, such as a child's bat or boy's wooden sword, and strike the bird a smart blow at the back of the neck, about the third joint from the head; death follows in a moment.

POULTRY DUNG.—Have this regularly swept up every Saturday, packed away in barrels and sprinkled over with plaster. Dana, with force and truth, says: "The strongest of all manures is found in the droppings of the poultry yard." Next year each barrel of it will manure half an acre of land; save it, then, and add to the productive energies of your soil. Don't look upon it as too trifling a matter for your attention; but recollect that the globe itself is an aggregate of small matters.

THE AGRICULTURE OF PALESTINE

In no part of the civilized world where a productive soil abounds, is the condition of agriculture at a lower ebb than in the country about Jerusalem. The city is largely inhabited by Jews, many of whom are pensioners of their brethren in all the rest of the world. They are miserably poor, indolent, and without employment. The country round about is in possession of the Arabs who hate the Christians much and the Jews more. The Arabs are the worst farmers in the world.

It is supposed by many that the lands of Palestine are generally of the poorest character for the purpose of the husbandman. Nothing could be further from the truth. The country possesses a great diversity of climate, owing to the variation in elevation. The Valley of the Jordan, at that level of the Dead Sea, is 1,312 feet below the Mediterranean, while the Mountain of Lebanon rises above the line of perpetual snow, which is at 9,300 feet above the sea, so that here is eternal winter, while the Valley of the Jordan is a perpetual tropical climate, and between these variations of latitude there are all the varieties of productions of the temperate zones. The soil in general a calcareous, light-colored loam in the interior, particularly near Jerusalem, and near the sea shore it is a dark red loam, and on the plains of Sharon very productive, yielding three crops a year of such things as will ripen within that space. The soil produces good wheat, and corn, oats, potatoes, &c., about equal to the average crops of Connecticut. Cotton has been produced here in quality and product per acre equal to the best upland plantations in the country.

Fruit of various kinds grow to great perfection. The grapes in particular are very superior, while peaches, pomegranates, apricots, plums, olives, figs, oranges, and melons, are rich and abundant.

Altogether, the climate and soil, and the productions, make it a most desirable country for a residence. The rich lands near Jaffa can be bought for a sum equal to about six or eight dollars an English acre.

To all this there is a drawback, which has heretofore deterred settlers from seeking a home there, who know how to appreciate and cultivate such a soil and make the productions profitable and homes in such a climate pleasant and beautiful. The country is in possession of the Arabs, who, in point of civilization, are but a small remove above the wild Indians of this continent.

From time to time missionary efforts have been made in Palestine, both by English and Americans, with one universal degree of success—that was to make no converts, but embitter the bigots against those who were trying to tell them of a better religion than their own.

Two years ago, an effort was made in a new line to ameliorate the condition of the inhabitants of Palestine. Seven Americans, with improved plows and other tools, and American seeds, located upon a piece of land seven miles from Jerusalem, one mile from Bethlehem—and made preparations for farming after the American system.

Their location was in the valley of Artos, upon the very site of one of the gardens of Solomon.

Their friends in the city were much opposed to their going out there to reside, urging them, if they were determined to try to cultivate the soil, to keep their residence in the city, for fear of the Arabs. This did not suit their plans, and they took up their residence upon the land and commenced operations, plowing deep with one of our best plows, harrowing with an iron-toothed harrow, such as was never seen there before, and planted corn, potatoes, beans, peas, oats, barley, wheat, and all sorts of garden vegetables; in short, making a perfect American farm.

The operations, instead of exciting the jealousy of the Arabs, aroused them to a state of surprise, and the news of what the Americans at Solomon's garden were doing, and what wonderful tools they were using, and how peaceable and quiet they were, never saying anything about their religion, flew on the wings of the wind, and visitors came to look and wonder, from far and near. The operations of the carpenter and blacksmith were not among the least sources of wonder. The rapid manner in which he heated his iron, and hammered it into just such shapes as he desired, was beyond the comprehension of simple minded people.

One day the farm received a visit from twenty-five Sheiks, who inspected all the tools and the way they were used, and the effect produced, and looked at the growing crops, so much beyond any thing they had ever seen produced before, and then turned their heads together to consult upon the wonders they had witnessed. The conclusion was that these people must possess a very superior kind of religion, as that is the standard

upon which they base all their estimates of character. They made applications at once for several of their sons to serve as apprentices to learn American farming, and did not even object that they should be taught the principles of American religion, as these are very good people, and God blesses their labor beyond any other in all Palestine.

It would have been dangerous now for any one to molest the American farmers, since they had all the Sheiks and principal men in the country on their side, and anxious for their success and influence. The Jews, too, began to think it would be better for them to cultivate such a fruitful soil than starve in the city, as many of them have done, and they began to apply for situations as laborers, notwithstanding the priests always taught them that it was derogatory to the notional character of the Hebrews to till the soil. Though, if they had undertaken it by themselves, they would not have been permitted by the Arabs, who hunt them as they would wild beasts.—But, under the protection of American farmers, the Arabs will permit them to labor, and it is now a matter of serious discussion among those who know of the success of this enterprise, whether the most feasible plan for colonizing the Jews in Palestine is not to make them cultivators of its rich soil.

Owing to some difficulty which arose in regard to the title of the land, they commenced upon in the Valley of Artos, the little colony moved last year to the Plains of Sharon, where they have got a permanent location, and the number consists now of ten Americans, male and female, and two Germans.—*N. Y. Tribune.*

THE FARMER'S WEATHER-OMETER!

Comprising General Indications and Local predictions respecting the Changes of Weather, gathered during Travels in America and Europe.

BY A. RURALIST.

"A rainbow in the morning
Is the Shepherd's warning;
But a rainbow at night
Is the Shepherd's delight!"

A rainbow in fair weather denotes foul—if in foul, fair weather will follow. A double rainbow indicates much rain.

A predominance of the purple color of the rainbow, shows wind and rain—dark red, tempest—light red, wind—yellow, dry weather—green, rain—blue, denotes that the air is clearing.

If the *Aurora Borealis* appear after several warm days, it is generally succeeded by a coldness of air. If the *Aurora Borealis* has been considerable, either an increased degree of cold is immediately produced, or bodies of clouds are immediately formed.

If, in a very wet season, the sky is tinged with a sea-green color, near the bottom, where it ought to be blue, it shows that rain will speedily follow, and increase; when it is of a deep dead blue, it is overcharged with vapors, and the weather will be showery.

When the sun appears white at the setting, or goes down into a bank of clouds, which lie in the horizon, they indicate the approach or continuance of bad weather.

When it rains with an east wind, it will probably continue for twenty-four hours.

The heaviest rains, when of long continuance, generally begin with the wind blowing easterly, which gradually veers round to the south—and the rains do not cease until the wind has got to the west, or a little north-west.

While rain is falling, if any small space of the sky is visible, it is almost a certain sign that the rain will speedily cease.

If the clouds that move with the wind become stationary, when they arrive at that part of the horizon which is opposite to the wind, and appear to accumulate, they announce a speedy fall of rain.

A frequent change of wind, with an agitation on the clouds, denotes a sudden storm.

A fresh breeze generally springs up before sunset, particularly in the summer.

The weather usually clears up at noon—but, if it rain at midnight, it seldom clears up till sunset.

The winds which begin to blow in the day time are much stronger, and endure longer than those which begin to blow only in the night.

A hollow or whistling wind denotes rain.

If the wind follow the course of the sun, fair weather will follow.

Weather, either good or bad, which takes place in the night time, is not generally of long duration—and, for the most part, wind is more uncommon in the night than in the day time. Fine weather in the night with scattered clouds, does not last.

Violent winds prevail more in the vicinity of mountains, than in open plains.

A Venetian author says—"A sudden storm from the north does not last three days."

If it thunders in December, moderate and fine weather may be expected.

If it thunders at intervals, in the spring time before the trees have acquired leaves, cold weather is still to be expected.

Thundering in the morning, denotes wind at noon—in the evening, rain and tempest.

In the summer if there be no thunder, the ensuing fall and winter will be sickly.

If it lightens on a clear star-light night, in the south or south-east, rain and wind will follow—if it lighten in an evening towards the north, south, or south-west, it indicates wind.

Hot weather generally precedes thunder, which is followed by cold showery weather.

When the wind is south-west during summer or autumn, and the temperature of the air is unusually cold for the season, both to the feeling and the thermometer, with a low barometer, much rain is to be expected.

Violent temperature, as storms of great rains, produce a sort of crisis in the atmosphere which produces a constant temperature, good or bad, for some months.

In a morning, if a mist which hangs over the

lowlands, draws towards the highlands, it is a sign of an approaching fine day.

If in the evening a white mist spreads over a meadow through which a river flows, it will be drawn up by the sun in the following morning, and a fine clear day will follow.

When the dew lies plentiful upon the grass after a fine day, another fine day may be expected; but if, after such a fine day, no dew fall nor any breeze be stirring, it indicates that the vapours are ascending, and will soon be precipitated in the form of rain.

It is certainly a surprising phenomenon to see the earth, after a very long and abundant rain to be sometimes almost dry, the roads quite free from dirt, and the lands to become quite arid and parched. This is a sign that the rain has not altogether ceased, and denotes a continual efflux of electric matter, which, being renewed, carries with it, in the form of vapours, all the moisture that falls on the earth. There is sometimes, however, a great deal of dirt, even after a very moderate rain, which, in that case, is a sign of fair weather, because it indicates that evaporation has ceased. Dry earth and moist stones announce rain.

If the flame of a lamp crackles or flares, it indicates rainy weather. The case is the same when soot detaches itself from the chimney and falls down.

It is a sign of rain when the soot collected around pots or kettles takes fire, in the form of points like grains of millet, because this phenomenon denotes that the air is cold and moist.

If the coals seem hotter than usual, or if the flame is more agitated, though the weather be calm at the time, it indicates wind.

When the flame burns steady, and proceeds straight upwards, it is a sign of fine weather.

If the sound of bells be heard at a great distance, it is a sign of wind, or of a change of weather.

The hollow sounds of forests, the murmuring noise of the waves of the sea, their foaming, and green and black colour, announces a storm.

Good or bad smells, when usually strong, seeming as if they were condensed, are a sign of change of weather, either because exhalations arise and are dispersed in more abundance which is a sign of elasticity,—or because the air does not dispel or raise these exhalations, which indicates that the constitution of the atmosphere is motionless, light, and void of elasticity.

When the spider's web and the leaves of trees are agitated without any sensible wind, it is a sign of wind, and perhaps of rain, because it denotes that strong and penetrating exhalations arise from the earth. These signs are less equivocal, when the dry leaves and chaff are raised into a vortex, and carried into the air.—*Ohio Cultivator*.

How to PERRY WOOD.—Take equal quantities of rock alum, white vinegar, calx and pebble-powder. Mix all together, and when the effervescence subsides, throw in the wood or other porous substance, and let it soak for four or five days, when the petrification will be complete.

Natural History.

THE OX—HISTORY, MANAGEMENT, &c.

THE SHORT-HORNS.

Of the breeders contemporaneous with the Collings, the most prominent were Sir Henry Vane Tempest, Col. John Trotter, and Mr. Mason. These gentlemen all derived their animals to commence with from the Ketton and Barmpton herds; Sir Henry's and Col. Trotter's being entirely from Robert Colling. It was the singular fortune of the Colonel, to sell three cows to Col. Melish for 2100 guineas, (£2210) a high evidence of the superiority of his breeding, and the excellence of his cattle. Col. Melish resold one of the three to Major Bower for 800 guineas. This was just twice the price of the highest of the cows in Charles Colling's sale. Col. Trotter bred that very superior bull Baron, (58) sold to Mr. Duncomb at a very high price. He was used with great success by Mr. Duncomb.

Mr. Mason was coeval nearly with the Collings, and continued breeding until 1829, when he sold, and his herd realized great prices. The leading purchaser was Lord Althorp, (afterwards Earl Spencer), who reared a large and valuable stock from this source, which numbered about 150 when he died; they were by his legatee, Mr. Hall, sold for very great prices, one bull reaching 400 and another 370 guineas, and some cows going to 200 guineas.

Sir Henry Vane Tempest of Wynyard, was clearly the leading breeder other than the Collings, during the period of the existence of the Ketton and Barmpton herds; and so far as permanent influence on the present short-horn is concerned, the best breeder. He commenced by the purchase from Robert Colling of a cow of his very extraordinary Princess tribe. From her are descended the famous and unsurpassed tribe of the Princess family, so distinguished in this day; and which is now, in its pure state, in England, solely in the possession of Mr. John Stephenson, of Wolviston, county of Durham.* Sir Henry died in 1813, and his widow, the Countess of Antrim, continued the Wynyard herd till 1818, when she sold off her cattle. At her sale Mr. Stephenson purchased the cow Angelina, of the Princess family, and from her he has reared his present herd of that tube, of which his cattle wholly consists.

Of the breeders of the present day, Mr. Stephenson and Mr. Bates of Kirkleavington, are more distinguished for the high style and quality of their cattle than any others in England. As a bull breeder, Mr. Stephenson has no equal. Mr. Bates commenced his breeding with the Duchess tribe, the last of which, owned by C. Colling, he bought, and until his death in 1849, it remained wholly in his possession. It has now been distributed at very large prices. Mr. Bates resorted to Mr. Stephenson's blood, and through Mr. Ste-

phenson's bull Belvedere, (1706) greatly improved his short-horns. His prominent prize animals were got by Belvedere.

The Yorkshire cow, which now a'most exclusively occupies the London dairies, is an unanswerable proof of the possibility of uniting the two qualities, fattening and milking, perfectly, but not at the same time: they succeed to each other, and at the periods when it suits the convenience of the dairyman that they should. Years ago the Yorkshire cow was, compared with other breeds, as great a favorite in the London market as at present. She yielded more milk, in proportion to the quantity of food consumed, than could be obtained from any other breed; but when the dairyman had had her four or five years, she began to fall off, and he dried her and sold her. It took a long time to get much flesh upon her; and when he calculated the expense of getting her into condition, he found that his cheapest way was to sell her for what she would fetch, and that seldom exceeded £5.

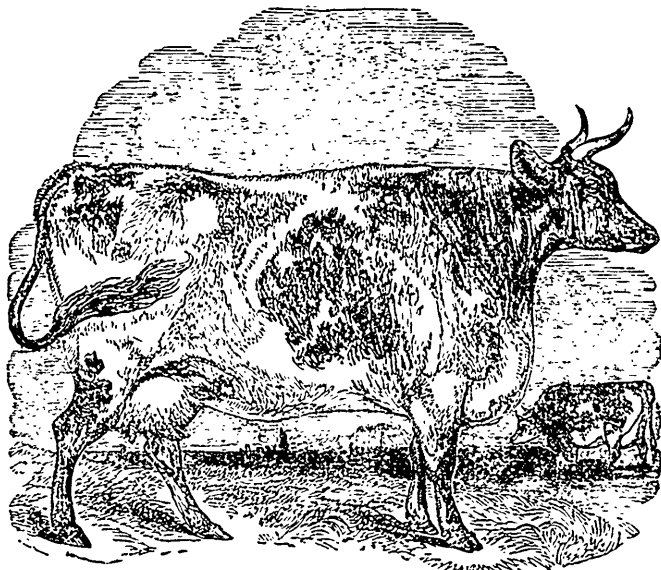
By degrees, however, the more intelligent of the breeders began to find that, by cautiously adopting the principle of selection—by finding out a short-horn bull whose progeny were generally milkers, and crossing some of the old Yorkshires with him—but still regarding the milking properties of the dam, and the usual tendency to possess these qualities in the offspring of the sire,—they could at length obtain a breed that had much of the grazing properties of the short-horn in the new breed, and retained, almost undiminished the excellences of the old breed for the pail. Thence it has happened that many of the cows in the London dairies are as fine specimens of the improved short-horns as can possibly be produced. They do not, perhaps, yield quite so much milk as the old ones, but what they do yield is of better quality; and whether the dairyman keeps them a twelvemonth or longer—and this is getting more and more the habit of these people—or whether he milks them for three or four years, as soon as he dries them, they fatten as rapidly as the most celebrated of the high bred short-horns.

We give a fair specimen of these cows: the character of the Holderness and the short-horn beautifully mingling. A milch cow good for the pail as long as wanted, and then quickly got into marketable condition, should have a long and rather small head; a large-headed cow will seldom fatten or yield much milk. The eye should be bright, yet peculiarly placid and quiet in expression; the chaps thin and the horns small.—The neck should not be so thin as common opinion has given to the milch cow. It may be thin towards the head; but it must soon begin to thicken, and especially when it approaches the shoulder. The dewlap should be small; the breast, if not so wide as in some that have an unusual disposition to fatten, yet very far from being narrow, and it should project before the legs; the chine, to a certain degree fleshy, and even inclining to fulness; the girth behind the shoulder should be deeper than it is usually found in the short-horn; the ribs should spread cut wide, so as to give as round a form as possible to

* The only other persons possessing females of this blood in its pure state, are Colonel Sherwood and Ambrose Stevens, of New York. They derived theirs from Mr. Stephenson, and in 1849 and '50 imported eight heifers and cows from him.

the carcass, and each should project farther than the preceding one to the very loins, giving, if after all the milch cow must be a little wider below than above, yet as much breadth as can possibly be afforded to the more valuable parts. She should be well formed across the hips and on the rump, and with greater length there than the milker generally possesses, or if a little too short, not heavy. If she stands a little long on the legs, it must not be too long. The thighs somewhat thin, with a slight tendency to crook-

edness in the hock, or being sickle-hammed behind; the tail thick at the upper part, but tapering below; and she should have a mellow hide, and little coarse hair. Common opinion has given to her large milk-veins; and although the milk-vein has nothing to do with the udder, but conveys the blood from the fore part of the chest and sides to the inguinal vein, yet a large milk-vein certainly indicates a strongly developed vascular system—one favorable to secretion generally, and to that of the milk among the rest.



THE YORKSHIRE COW.

The last essential in a milch cow is the udder, rather large in proportion to the size of the animal, but not too large. It must be sufficiently capacious to contain the proper quantity of milk, but not too bulky, lest it should thicken and become loaded with fat. The skin of the udder should be thin, and free from lumps in every part of it. The teats should be of moderate size; at equal distances from each other every way; and of equal size from the udder to nearly the end, where they should run to a kind of point. When they are too large near the udder, they permit milk to flow down too freely from the bag, and lodge in them; and when they are too broad at the extremity, the orifice is often so large that the cow cannot retain her milk after the bag begins to be full and heavy. The udder should be of nearly equal size before and behind, or, if there be any difference, it should be broader and fuller before than behind.

The quantity of milk given by some of these cows is very great. It is by no means uncommon for them, in the beginning of the summer, to yield 30 quarts a day; there are rare instances of their having given 36 quarts; but the average may be estimated at 22 or 24 quarts. It is said that this milk does not yield a proportionate quantity of butter. That their milk does not contain the same proportionate quantity of butter as that from the long-horns, the Scotch cattle, or the

Devons, is probably true; but we have reason to believe that the difference has been much exaggerated, and is more than compensated by the additional quantity of milk. The prejudice against them on this account was very great, and certain experiments were made, by the result of which it was made to appear that the milk of the Kyloe cow yielded double the quantity of butter that could be produced from that of the short-horn. Two ounces were obtained from the milk of the Kyloe, and one from that of the short-horn.

This aroused the advocates of the short-horns, and they instituted their experiments, the result of which was much less to the disadvantage of the breed. Mr. Bailey, in his survey of Durham, gives an account of an experiment made by Mr. Walton of Middleton.

He took from his dairy six cows promiscuously, and obtained the following quantity of butter from a quart of the milk of each of them:—

No. 1, 3 oz. 6 dwts.; No. 2, 1 oz. 6 dwts.; No. 3, 1 oz. 12 dwts.; No. 4, 1 oz. 10 dwts.; No. 5, 1 oz. 14 dwts.; No. 6, 1 oz. 6 dwts.; Total, 10 oz. 8 dwts.; which, divided by 6, leaves nearly 1 oz. 14½ dwts., or about $\frac{7}{8}$ of the weight of butter from the milk of a short-horn that the same quantity of milk from a Kyloe yielded.—Then, the increased quantity of milk yielded by the short-horn gave her decidedly the preference, so far as the simple produce was concerned.

This experiment brought to light another good quality in the short-horn, which, if not altogether unsuspected, was not sufficiently acted upon—that she improved as a dairy cow as she got older. The cow, a quart of whose milk produced more than 3 oz. of butter, was six years old, the other five were only two years old; the experiments proved that her milk was richer at 6 years old, than it had been at two. This deserves investigation.

Another circumstance is somewhat connected with such an inquiry. The Kyle and the long-horn cat seem to care little about change of situation and pasture; but the short-horn is not so easily reconciled to a change; and her milk is not at first either so abundant or so good as it afterwards becomes.

There is a great difference in the quantity of food consumed by different breeds of cattle, and that the short-horns occupy the highest rank among the consumers of food is evident enough; but we never could be persuaded that the difference of size in the same breed made any material difference in the appetite, or the food consumed. When they stand side by side in the stall or cow-house, and experience has taught us the proper average quantity of food, the little one eats her share, and the larger one seldom eats more, even when it is put before her. There are occasional differences in the consumption of food by different animals, but these arise far oftener from constitution, or from some unknown cause, beyond the possibility of doubt, that the larger cattle, the breed and other circumstances being the same, yield the greatest quantity of milk.

Experience has also proved another thing—that the good grazing points of a cow, and even her being in a fair store condition, do not necessarily interfere with her milking qualities. They prove that she has the disposition to fatten about her, but which will not be called into injurious exercise until, in the natural process of time, or designedly, she is dried. She will yield nearly as much milk as her unthrifty neighbor, and milk of a superior quality, and at four, five, or six years old, might be pitted against any Kyle, in the quality of her milk, while we have the pledge that it will cost little to prepare her for the butcher, when done as a milker. On this principle many of the London dairymen now act, when they change their cows so frequently.

The following observations were made by Mr. Calvert, of Brampton, on the quantity of butter yielded by one of his short-horns. The milk was kept and churned separately from that of the other stock, and the following is the number of pounds of butter obtained in each week: 7, 10, 10, 12, 17, 13, 13, 13, 15, 16, 15, 12, 13, 13, 13, 14, 14, 13, 12, 12, 13, 11, 12, 10, 10, 8, 10, 9, 10, 7, 7, 7.

There were churned 373 pounds of butter in the space of 32 weeks. The cow gave 28 quarts of milk per day, about midsummer, and would average nearly 20 quarts per day for 20 weeks.

LINCOLNSHIRE.

There is a large, coarse short-horn prevailing, particularly in Lincolnshire, denominated in the quotations of the Smithfield markets "Lincolns," but they have no further affinity with the im-

proved short-horns than as the latter have been referred to for their improvement, which has been accomplished to a considerable degree.

Breeders, with judgment, called in the aid of the short-horn, and speedily and effectually completed their object. They took away the disposition to make lean beef only, although in very great quantities; and if they could not perfectly give to the Lincolns their own early maturity, they materially quickened the process of fattening.

An improved Lincolnshire beast is therefore now a very valuable animal; and if a finer grass could be given to the meat, his great quantity of muscle, compared with that of fat, would be no disadvantage.

THE ALDERNEYS.

The Normandy cattle are from the French continent, and are larger and have a superior tendency to fatten; others are from the islands of the French coast; but all of them, whether from the continent or the islands, pass under the common name of Alderneys.

They are found mainly in gentlemen's parks and pleasure-grounds, and they maintain their occupancy there partly on account of the richness of their milk, and the great quantity of butter which it yields, but more from the diminutive size of the animals. Their real ugliness is passed over on these accounts; and it is thought fashionable that the view from the breakfast or drawing-room of the house should present an Alderney cow or two grazing at a little distance.

They are light red, yellow, dun or fawn-colored; short, wild-horned, deer-necked, thin, and small boned; irregularly, but often very awkwardly shaped.

Mr. Parkinson, who seems to have a determined prejudice against them, says that "their size is small, and they are of as bad a form as can possibly be described; the bellies of many of them are four-fifths of their weight; the neck is very thin and hollow; the shoulder stands up, and is the highest part, they are hollow and narrow behind the shoulders; the chine is nearly without flesh; the hucks are narrow and sharp at the ends; the rump is short, and they are narrow and light in the brisket." This is about as bad a form as can possibly be described, and the picture is very little exaggerated, when the animal is analyzed point by point; yet all these defects are so put together, as to make a not unpleasing whole.

The Alderney, considering its voracious appetite—for it devours almost as much as a short-horn—yields very little milk. That milk, however, is of an extraordinarily excellent quality, and gives more butter per quart than can be obtained from the milk of any other cow. Some writers on agricultural subjects have, however, denied this. The milk of the Alderney cow fits her for the situation in which she is usually placed, and where the excellence of the article is regarded, and not the expense: but it is not rich enough, yielding the small quantity that she does, to pay for what she costs. On the south coast of England, there is great facility in obtaining the Alderney cattle, and they are great favorites there.



THE ALDERNEY COW.

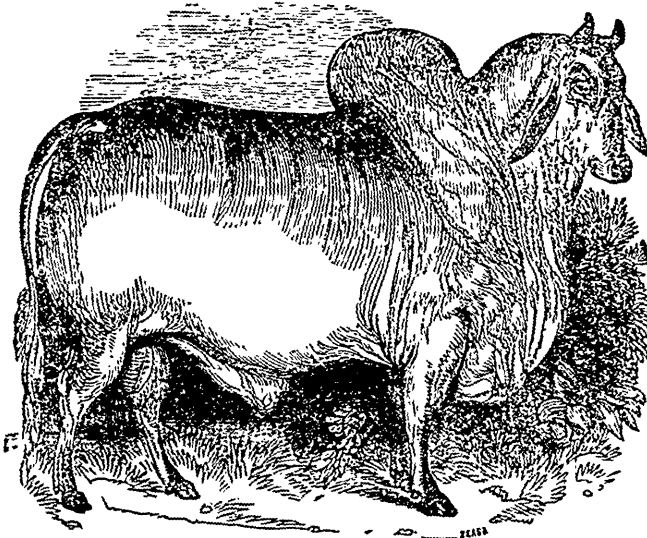
One excellence it must be acknowledged that the Alderneys possess; when they are dried, they fatten with a rapidity that would be scarcely thought possible from their gaunt appearance, and their want of almost every grazing point, while living.

Some have assigned to the Norman or Alderney cattle a share in the improvement of the old short-horns; but the fact does not rest on any good authority.

EAST INDIAN CATTLE.

Several varieties of these have been imported, and attempts made to naturalize them, but with varied success, and among them the Nagore cattle.

They are used in India by the higher orders, to draw their state carriages, and are much valued for their size, speed, and endurance, and sell at very high prices.



THE NAGORE BULL.

They will travel, with a rider on their back, fifteen or sixteen hours in the day, at the rate of six miles an hour. Their action is particularly fine—nothing like the English cattle, with the sideway, circular action of their hind legs. The

Nagore cattle bring their hind legs under them in as straight a line as the horse. They are very active, and can clear a five-barred gate with the greatest ease.

 Editorial, &c.

G. BUCKLAND, ESQ., EDITOR.

H. THOMSON, ESQ., ASSISTANT EDITOR.

 HINTS FOR THE MONTH.

The sowing of fall wheat should, as a general thing, be completed in all parts of Upper Canada before the close of September. This important operation, therefore, cannot be safely deferred, except on very rich soils and in dry and warm situations, till the present number reaches the hands of our subscribers. In consequence of the heavy showers that have fallen for the last two or three weeks, wheat-sowing has been effected under favorable circumstances, and the grain in many places already indicates a strong and healthy germination. Where the soil has not been too hard to work, and proper attention has been paid to the draining and pulverising of it, its condition for the reception of the seed, after so long and intense a drought as this continent has generally experienced, must be regarded as highly favorable to the promotion of next year's crop.

It is of importance to bear in mind, when dealing practically with the wheat plant, that one of its principal and most common enemies is stagnant water, so frequently seen in low parts of fields during spring and autumn. Of course in a country recently recovered from the forest it is unreasonable to expect such a surface and drainage as characterise countries which have been subjected to cultivation for centuries. Still, many of our farmers might do much more towards securing and increasing their crops by a little timely attention to inexpensive draining, than is commonly practised. Presuming that the soil sown with wheat has been properly cleaned and laid up into ridges in a workmanlike style, leaving the furrows sufficiently deep and open to carry off most of the superfluous water, under ordinary circumstances, yet how often does it occur in practice that certain low portions of the field are partially inundated for many days together after heavy and continued rains. Much of this evil may readily be mitigated, if not wholly removed, by ordinary attention to the making of cross-furrows of sufficient depth to

meet the exigencies of each particular case. It is a practice to be recommended after the field has been sown, even in the best style of management, to walk over it after the first heavy rain, and with a spade give vent to all pent up water.

A few inches deepening of an ordinary furrow, or a slight cross cut for a few feet will often be found sufficient to relieve a considerable area, in which the seed must otherwise have perished.

This is the season too, when the farmer, after having got through the hurry and fatigues of summer work, and consigned to the bosom of Mother Earth the germs of a future harvest, can look around him, and plan and execute work of general and permanent improvement. At the basis of all such improvement in wet lands, is *efficient draining*—an operation that may be advantageously carried on through this and the succeeding month; and in some seasons and situations, even later. By efficient draining is meant the entire removal of all stagnant and therefore injurious water from the farm by improving the natural outfall, where necessary, and the making of open ditches and covered drains of sufficient depth, communicating therewith.—If only the natural drainage of farms was improved and a few deep ditches cut so as to intersect the lowest and wettest places, the benefit that would result would appear to those inexperienced in such matters truly astonishing. We say then to our readers, drain as well and as fast as you can, and lose not a day in making a commencement in right earnest. Of course as practical and judicious men, the style and extent of the work will depend on your means and local requirements.

The harvesting of root crops will now require attention. Many kinds of potatoes, Swede turnips and mangel wurzel are yet, owing to the late rains, in a very growing state. Early sorts of potatoes should now be lifted, and well exposed to the air and sun before being put into pits or otherwise stowed away. In pitting turnips, mangrels, carrots, &c., in the open air, care is necessary not to cover them too thickly with earth, and to allow room through the top of the heap for the escape of the products of evaporation. From inattention to this precaution, many

valuable heaps of roots become rotten and useless. There is, even in this climate, more danger to be apprehended from a too thick air-tight covering than from frost. A storehouse of well preserved roots is indeed to the stock breeder a most valuable acquisition; a few turnips or carrots in early spring will often prove the means of preserving animals in a healthy and growing state, which would otherwise be exposed to the many evils resulting from short commons, or it may be absolute starvation.

Fall ploughing can now be advantageously proceeded with, and on stiff soils, when well executed, and the largest amount of surface exposed to the frost, it is a beneficial practice. The procuring of firewood, repairing fences, threshing and marketing of grain, and preparing winter quarters for stock, are the principal seasonal duties of the agriculturist.

LOWER CANADA EXHIBITION.

The second Exhibition of the Lower Canada Agricultural Association was held at Quebec on the 13th and 14th of September. The writer paid a visit to the grounds on the 12th, but was obliged to leave for Upper Canada before the Exhibition had fully opened. We cannot therefore speak of it as a whole, from personal knowledge, but what we *did* see, led to the conviction that agriculture in the neighborhood of Quebec is still in a backward condition. We noticed some excellent Horses of the Canadian breed, and a few good Durhams. The latter would have been considered "nothing to boast of" at one of our Township Shows. The Montreal District, which is far ahead of that of Quebec in agricultural improvement, contributed very little to the Exhibition, although communication on the river steamers is not expensive or hazardous. The Eastern Townships, also far ahead of Quebec and its vicinity, added but little to the show. We need not therefore wonder at its deficiencies. The season has not been favorable for root crops, but the show of potatoes equalled, if it did not surpass, any we remember to have seen in Upper Canada. Turnips, Beets, Carrots, &c., were small and "rooty." In the Horticultural department we noticed some excellent specimens.

The Cauliflower was of most tempting aspect, and the display of Apples, Plums, &c., though not large, was very choice. We believe the best collection was from the neighborhood of Montreal.

The IMPLEMENTS were very inferior. Perhaps this department was improved by the additions made subsequent to our visit, but the ploughs, harrows, &c., exhibited on the first day, would not have been deemed worthy of a 3rd prize at an Upper Canada County Show. We think the Lower Canada Board of Agriculture should take some special means to introduce improved implements among the *habitans* of Quebec District.

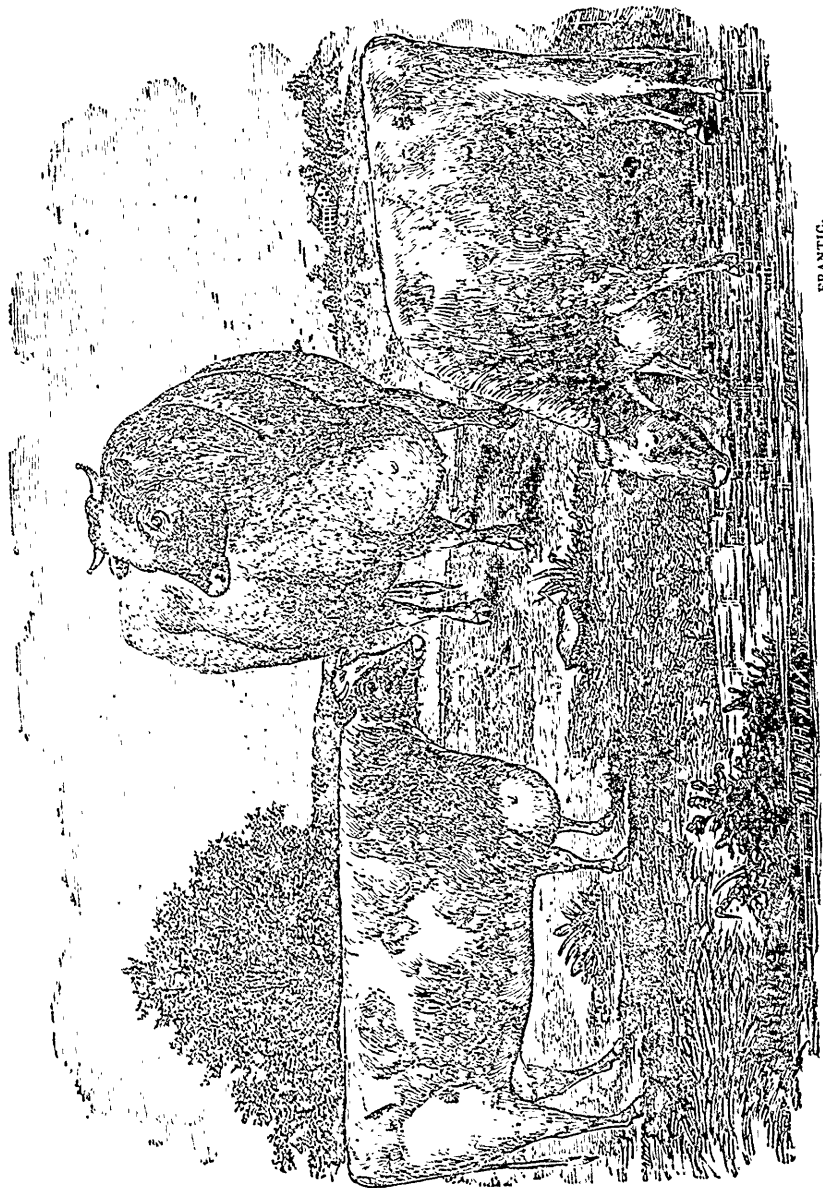
The show of POULTRY was the best part of the Exhibition. Mr. J. W. Platt of New York, and Mr. Peacock of Montreal were the principal exhibitors. Shanghai and Cochin China, and all the fashionable varieties were well represented.

The FINE ARTS made a poor display. We were somewhat surprised at the small number of contributions to this department. One would suppose that the long winters of Quebec would be favorable to the indulgence of artistic taste. How do the daughters of the rich spend their weary hours?

NAVAL ARCHITECTURE is of course a popular study at Quebec. The models exhibited were numerous, and attracted the notice of the curious in such matters.

The show of FURS was not large, but very suggestive of the dangers to which fingers, ears, &c., are exposed in that rigorous climate. FURNITURE and Cabinet work made a poor show as to quantity, but very fair as to quality.

The buildings and arrangement of the grounds gave evidence of skill and liberal expenditure on the part of the Committee, but we think they must have felt, from the little interest excited among the farmers, that their efforts have been greater than the results. We believe, however, that Lower Canada is making progress in agriculture as well as in other branches of industry, and though her "Provincial Shows" may for some years to come be inferior to those of the Upper Province, they will undoubtedly improve, and justify the liberal grants the Legislature has made for that purpose.



AGATE, HALTON, FRANTIC. AND IMPROVED THIBERS "AGATE" AND "FRANTIC."

MR. CHAPMAN'S HERD OF SHORT-HORNS.

We have much pleasure in presenting our readers with an engraving of Mr. Chapman's celebrated bull, *Halton*, and his two recently imported heifers, *Agate* and *Frantic*. *Halton* is well known to many of our reader, as he was formerly owned by the Hon. Adam Fergusson, whose present herd is indebted for much of its superior excellence to the blood derived from this splendid animal. Mr. Fergusson took the first premium for *Halton* in the class of Foreign Stock at the New York State Exhibition, in 1851. *Agate* and *Frantic* are from Bates's celebrated family of Short-Horns, *Duchess*,—a race of animals representing the most perfect type of the Improved Durham, and standing altogether unrivalled.

Mr. Chapman has for some years spared neither time nor expense in this important department of Rural Economy, and his present herd cannot, perhaps, be surpassed by any other on this continent. As some of our readers may feel a desire to see for themselves, we will only add, that Mr. Chapman's residence is at Clockville, Madison County, N. Y., between Syracuse and Utica, six miles from Canastota Station, on the New York Central Railway.

Annexed are full pedigrees of the above mentioned animals, and some others of Mr. Chapman's Herd, copied from the Register of Thoroughbred Stock, in the *Wool Grower*:—

BULLS.—SHORT-HORNS.

HALTON, (11,552.)

Red roan, calved August 22, 1847, bred by Geo. Bell, Esq., of Troy, N. Y., the property of S. P. Chapman, Mount Pleasant Farm, Clockville, Madison Co., N. Y.; got by Meteor 104, (11811) dam [Lady Barrington 3d.] by Cleveland Lad, (1707) g. d. [Lady Barrington 2d] by Belvedere (1806) gr. g. d. [Lady Barrington] by a son of Chapman, (304)—[Young Alicia] by Wonderful (1809)—[Alicia] by Alfred (23)—by Young Fancie (6994.)

COWS.—SHORT-HORNS.

AGATE.

Roan, calved Dec. 6, 1850, bred by Robt. Bell, Mosbro' Hall, Rainford, Lancashire, England, the property of Geo. Vail, of Troy, N. Y., and S. P. Chapman, Mount Pleasant Farm, Clockville, Madison Co., N. Y.; got by Third Duke of York (1866) dam [Annie] by Second Cleveland Lad, (1805) g. d. [Annabella] by Duke of Cleveland, (1706) gr. g. d. [Acomb] by Belvedere (1706)—a purchase of Mr. Bates.

FRANTIC.

Roan, calved September 3, 1850, bred by Robt. Bell, Mosbro' Hall, Rainford, England, the property of Geo. Vail, Troy, N. Y., and S. P. Chapman, Mount Pleasant Farm, Clockville, Madison Co., N. Y.; got by Fourth Duke of York (30167) dam [Faith] by Fourth Duke of Northumberland, (3649) g. d. [Fidget] by Second Earl of Darlington, (1945) gr. g. d. [Fletcher] by a son of Young Wynward, (2859)—descended from J. Brown's Old Red Bull, (97.)

BRIGHT EYES III.

Red, calved June 23, 1850, bred by Robt. Bell, Mosbro' Hall, Rainford, England, the property of Geo. Vail, Troy, N. Y., and S. P. Chapman, Mount Pleasant Farm, Clockville, Madison Co., N. Y.; got by Earl Derby (10177) dam [Bright Eyes 2d] by Lord George Bentuck (9317) g. d. [Bright Eyes] by Conqueror, (6885) gr. g. d. by Son of Bearl (65)—by Mason's Son of Comet (155)—by Wellington, (683.)

DUCHESS.

White, calved June 25, 1849, bred by S. P. Chapman, Mount Pleasant Farm, Clockville, Madison Co., N. Y.; got by Duke of Wellington 55, (3654) dam [Matilda] by White Jacket, (5647) g. d. [Hart] imported.

DUCHESS II.

White, calved May 24, 1852, bred by S. P. Chapman, the property of Wm. P. Lowmsbury, Fenner, Madison Co., N. Y.; got by Meteor 104, (11811) dam [Duchess] by Duke of Wellington 55, (3654), &c., &c.

DUCHESS III.

White, calved May 13, 1853, bred by S. P. Chapman, the property of Cooper Sayre, Oaks Corners, Ontario County, N. Y.; got by Halton, (11552) dam [Duchess] by Duke of Wellington 55, (3654) &c., &c.

DUCHESS IV.

Red roan, calved March 24, 1854, bred by S. P. Chapman, the property of R. D. Palmer, Clinton, Lenawee Co., Michigan; got by Halton, (11552) dam [Duchess] by Duke of Wellington 55, (3654) &c., &c.

COMET.

Roan, calved June 13, 1849, bred by S. P. Chapman, Mount Pleasant Farm, Clockville, Madison Co., N. Y., the property of R. Wade, Canada West; got by Buena Vista, dam [Ruby] by Symmetry 166, (12170) g. d. [Wiley 3d] by Mars, gr. g. d. [Young Willey] by York,—[Old Willey] imported.

FIRE KINDLERS.—Take a quart of tar, 3 lbs. of rosin, melt them, bring to a cooling temperature, mix with as much saw-dust with a little charcoal added, as can be worked in; spread out while hot upon a board; when cold, break up into lumps of the size of a large hickory nut; and you have at a small expense, kindling material enough for a household one year. They will easily ignite from a match, and burn with a strong blaze, long enough to start any wood that is fit to burn.

LORD DUNDONALD.

The Earl of Dundonald, better known as Lord Cochrane, has just taken out a patent in the United States for a composition of asphaltum for the covering of telegraphic wires, and for the making of foundations for piers and light-houses; for the preservation of all wood under water; for the making of pipes, tanks, &c. Since the introduction of the electric telegraph in the United States, it has been found impracticable in certain states of the atmosphere to transmit intelligence along the wires from their exposure to atmospheric influences. By the Earl's invention this difficulty is removed, and an important desideratum effected in the art of telegraphing, as the substance employed completely insulates the wires, which will be carried underground, instead of being, as at present, stretched on high poles—thus being more efficient, much more secure from injury, and getting rid of the inconvenience of poles and wires in public thoroughfares. The composition is indestructible, and can be supplied at little more than half the cost of anything previously used. We believe Lord Dundonald is now about in his 80th year; an early riser, hale, active, and hearty! We hope he will live yet many years to grace his order, use his vigorous intellect for the benefit of his country and humanity at large, and remain a proof that a man is less likely to wear out than rust out.

SALE OF LIVE STOCK, &c.

We would direct the attention of our numerous readers to the advertisement on another page of the sale of Cattle, Sheep, Horses, &c., at the residence of Mr. JOHN CADE, Oshawa, on the 25th and 26th October. We have every reason to believe that Mr. Cade has been very successful in the improvement of his Stock, and that the present sale presents a favorable opportunity to persons desirous of improving in this important department of Agriculture. The terms are liberal.

NATIONAL EXHIBITION OF CATTLE.

U. S. AGRICULTURAL SOCIETY.

At a meeting of the Executive Committee of the UNITED STATES AGRICULTURAL SOCIETY, held in the City of Washington, in February last it was resolved that the Society would hold an Exhibition in any State having a State Agricultural Society, without the assent of the Officers or of the Executive Committee of such Society.

The citizens of Springfield, Ohio, having requested this Society to hold an Exhibition of Cattle, at that place, during the current year, and generously subscribed about *ten thousand dollars* to defray all the expenses of the same, and to guarantee the Society against loss; at the Executive Committee of the Ohio Agricultural Society uniting in the request, the Executive Committee of this Society have concluded to hold a NATIONAL SHOW OF CATTLE, open to general competition, without sectional limit, on the 25th, 26th, and 27th days of OCTOBER next at SPRINGFIELD, in the State of Ohio; to which members of the U. S. Agricultural Society will be admitted free of charge.

The friends of Agriculture in all the States of the American Union, and in the neighboring provinces of Canada, are invited to co-operate with us, so that this Exhibition may be the more extensively useful, and be alike creditable to the generous citizens of Springfield with whom it is conducted—to the Contributors and Visitors, to sustain it—and to the United States Agricultural Society, who are so deeply interested in its success.

In consequence of the holding of this Show of Cattle, the contemplated Exhibition of Horses at Springfield, Mass., and the Show of Sheep in Vermont, will be omitted.

The Journal of the Society, which the Executive Committee have concluded to issue once in each year—four numbers in one—will appear in January next; and will contain the Transactions of the Society at its Annual Meeting, Lectures and Addresses delivered at that time, a full and faithful account of the Springfield Show, with other valuable papers, by eminent members. This volume will be forwarded to all Members who have paid their annual assessments for the year 1854.

MARSHALL P. WILDER, *President*

WILLIAM S. KING, *Secretary*

Boston, August, 1854.

Literary and Miscellaneous.

POETRY.

"SPEED THE PLOUGH."

See how the shining share
Maketh earth's bosom fair,
Crowning her brow!
Bread in its furrow springs,
Health and repose it brings,
Treasures to unknown kings—
God speed the plough!

Look in the warrior's blade,
White o'er the tented glade,
Hate breathes its vow,
Wrath, its unhealing wakes,
Love at its lightning quakes,
Weeping and woe it makes—
God speed the plough!

Ships o'er the deep may ride,
Storms wreck their bannered bride,
Waves whelm their prow;
But the well-load'd wain,
Gaining the golden grain,
Gladdens the household train—
God speed the plough!

Who are the truly-great?—
Munions of pomp and state,
Where the crowd bow?
Give us hard hands and free,
Culturers of field and tree,
Best friends of liberty—
God speed the plough!

EDUCATION ANALYSED.

BY MRS. M. F. H. THOMAS.

CHAPTER III.

Physiology, or the knowledge of our physical life: *Metaphysics*, or the science of mind: *Hygiene*, or the adoption of the outer world to our natures, lie at the basis of, if they do not in fact comprehend, all knowledge.

Physiology—Mind is a force acting through a medium, and modified in its action by the conditions of that medium—the natural organism.—Minds are governed by fixed laws, and therefore, mind acts through matter—through the organism—in its normal or healthy condition, in a certain manner, in an abnormal or unhealthy condition, the action must be modified,—for every cause must produce its proper effect. Hence, if the body be unhealthy, the mind must produce unhealthy manifestations—must have a diseased action. Experience, as well as philosophy, teaches the same fact. It is well known and consented by all, that diseases of the brain effect the mind, and that compression of its substance produces insensibility. It is also well known, that disease of any part of the body deranges, in a greater or less degree, the whole organism. Hence we see that the normal action of the mind depends upon the health of the body. We call this a world of

sin and woe. Yet if we but considered, all our trials arise from ill-health, diseased action of mind and body. The constant transgressions of natural laws have degenerated the human constitution, until we can scarcely conceive what it would have been—that it would have borne, in its primeval state. Enough, however, can be gleaned by comparing the fortitude shown by the same individual in the state of comparative health, usually called *well*, when confessedly sick. Then mole-hills appear mountains, and small troubles unbearable trials. Who has not felt the utter helplessness and despair of the sick, sensitive mind in affliction? How different from the stout heart and buoyant spirits with which we brave adversity in health. Have riches taken to themselves wings and fled away? we are strong to win more, or at least, to "fight the battle for life," Have friends deserted us? we are well and can struggle on, and win more. And last and hardest to bear, have the loved died? we are well, and can bear it: and though unforgotten, the healthy mind possesses a buoyancy which nothing can destroy. Perfect health and despair are incompatible. Know then, when you feel despair's cold hand at your heart, the darkness of night around, and no strength within to bear up, know that the evil is not all without. Disease within aggravates the ills without. Strengthen and purify the body, by attending to the laws of health, and with the trial will come a way of escape. Light will break in, and inward strength will lighten the burden.

The connection between ill-health and vice is even more intimate. With deranged physiology will be deranged mentality—disorder everywhere. He cannot act consistent who is racked by disease, whatever be the purity of his intentions. Though he strive to fulfil the duties of his God-given mission, he strives in darkness and imbecility. Thwarted by physical inability, he finds the mind powerless. Then health is indeed all-important. Yet a knowledge of our organism is necessary to its maintenance. Surely, we would scarcely think of attempting to regulate and keep in order a complicated machine, with whose construction we were strangers. Should we not justly call such an attempt presumption? Yet we are not our bodies complicated machines,—“harps of a thousand,” nay million strings?—And oh, most easily are those delicate instruments disordered. We are fearfully and wonderfully made, and unlike other machines, disorder in one part produces disorder in the whole, so intimate

are its dependencies. And besides, if one law is transgressed, there is a greater liability to transgression; depraved tastes and desires, a feebleness of the "light within," is the consequence. Is it strange then, that in the ignorance of the past and present, men have deteriorated?—that the term of human life has dwindled down from centuries, not to "three score and ten," but to about 30 years? Is it strange that this is a world of sin and misery—a sin cursed earth? Stranger that our planet has not become a tenantless desert, or that the miserable remnant of the human family should know aught of virtue or happiness. Or at least, that we have not become, like the blubber-eating Esquimaux, (the patent argument of grease-loving gourmants, and fat-burning theories of calorification) incapable of aught but a beast's life, and a dull beast at that. Think you, that that young woman, (*lady*, beg pardon, *women* are quite out of fashion now) as she tugs at the corset strings, to assimilate herself as much as possible to the very fascinating figure of a *mud wasp*, or *black spider*, or walks the damp earth in the merest apologies in the world for shoes—delicate, little, paper-soled things, so tight as to impede circulation,—thus preventing poor, abused nature from remedying the evil at all, by supplying heat to the exposed members—Think you, I say, that she would dare to thus sow the seeds of a sure and early blight, of premature death, if she knew the extent of the evil she was causing? Did she know the processes, so essential to life, which she is impeding, there would be far less suffering in woman's lot than at present. The curse of life would be, comparatively, no more. The "dark valley" would not garner, in its ghostly bosom, so much of the youth and beauty of our devoted sex. Let the advocates of dainty, diseased delicacy in woman,—the admirers of puny, sickly, dying, (aye, dying piecemeal) decay-struck specimens of fashion's architecture, or rather of fashion *desecration*, say what they will, God never made half of the human race to be mere *cyphers*, and suffering cyphers at that—of no use, and a burden to themselves. No, it would be blasphemy to say that God made the miserable wrecks, which strew our blighted earth. There is indeed a little of God's creation left, enough if we would let it work, to "leaven the whole lump"; but the most part, is monstrous deformity—the fungus growth of broken law penalties.

Brooklin, September, 1854.

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ADVERTISEMENTS.

EXTENSIVE CREDIT SALE!!

MR. JOHN CADE having sold his Estate, and intending to Retire, will sell, without Reserve by

PUBLIC AUCTION,

On the 25th and 26th days of October, 1854

at his residence, near Oshawa, the whole of his superior Stock of Improved Durham Cattle; Pure Bred Leicester Sheep, Horses, Harness, Implements of Husbandry, &c., &c.

THE STOCK CONSISTS OF

- | | |
|---|---------------------------|
| 1 Span matched Clydsdale Horses, one four and the other five years old, | 1 Sow—10 Pigs, |
| 1 Span Carriage Horses, | 3 Double Waggon's, |
| 1 Draught Horse, 8 years old, | 1 Two horse Buggy, |
| 1 Mare and foal, | 1 Single Buggy, |
| 1 Brood Mare, | 1 Sleigh, |
| 1 Three year old horse colt, | 1 Pleasure Sleigh, |
| 2 Two year old horse colts, | 1 Pair Bob Sleds, |
| 1 Year old filly, | 1 Mowing Machine, |
| 8 Thorough bred Cows, | 3 Scotch Ploughs, |
| 6 Two year old heifers, | 1 Pair Double Harrows, |
| 2 Two year old steers, | 4 Single Harrows, |
| 2 Yearling heifers, | 3 Sets Double Beam Har- |
| 2 Heifer calves, | 1 Set (double) Buggy Har- |
| 1 Steer calf, | 1 Set single do. do. |
| 1 Thorough bred Durham Bull, four years old, | 1 Set Silver Mounted & |
| 1 Thorough bred Durham Bull, 10 months old, | 1 Roller, |
| 3 Thorough bred Durham Bull Calves, | 1 Turnip Drill with Roll- |
| 3 Aged Rams, | 2 Scutlers, |
| 2 Shearling Rams, | 2 Ribbing Ploughs, |
| 4 Ram Lambs, | 1 Farming Mill, |
| 68 Ewes, | 2 Saw Cutters, |
| 24 Ewe Lambs, | 2 Waggon Racks, |
| 18 Wether Lambs, | 2 Wheelbarrows, |
| 10 Fat 2 year old Wethers, | 1 Grindstone, |
| 18 Fat yearling Wethers, | 3 Ladders, |
| | 1 Breaking Bridle, |
| | 1 Stack of Hay, |
| | 7 Acres of Turnips,— |
| | sold to suit purchasers. |

Also, about 50 tons of Hay to be sold by private.

It will be seen by the above list of Animals that such a portunity as this seldom occurs, for those who have a desire to improve their stock. MR. CADE has been a Progressive grower for the last 20 years, and has spared no pains or expense in procuring the best animals attainable to breed from: a doubtful if such a display of animals, taking the Stock together, can be produced by any Farmer in the County.

TERMS:—All Sums under £1 Cash; over that 5 Months Credit will be given, by furnishing Approved Notes. Interest to be charged from date, if not paid when

SALE TO COMMENCE at 10 O'CLOCK, Each Day

J. C. STERLIN
Auctioneer

Oshawa, Sept. 8, 1854.

University of Toronto.

THE ANNUAL EXAMINATIONS will commence on THURSDAY, November 2nd.

The following SCHOLARSHIPS are offered for competition, amongst Matriculants:—

In LAW—2 of the value of £30 per annum, each.

In MEDICINE—3 of the value of £30 per annum, each.

In ARTS—23, (8 under the former and 15 under the new regulations) of the value of £30 per annum, each.

In CIVIL ENGINEERING—2, of the value of £30 per annum, each.

In AGRICULTURE—3, of the value of £30 per annum, each.

In addition to these, there are offered for competition in Arts:

Amongst Students of the standing of one year from Matriculation—15, of the value of £30 per annum, each.

Amongst Students of the standing of two years from Matriculation—15, of the value of £30 per annum, each.

Amongst Students of the standing of three years from Matriculation—15, of the value of £30 per annum, each.

Each of these Scholarships is tenable for one year, but the Scholars of each year are eligible for the Scholarships of the succeeding year. The Academic year 1854-1855 will end on May 26, 1855, about which period the Annual Examinations for the Academic year 1855-1856 will be held.

Candidates for admission are required to produce satisfactory certificates of good conduct and of having completed the 14th year of their age, and to pass an examination in the subjects appointed for Matriculation; or to produce similar certificates of good conduct and of having completed the 16th year of their age, and to pass an examination in the subjects appointed for Students of the standing of two years in this University. The former are admissible to the degree of B. A. after four, the latter after two years from admission.

Graduates or Undergraduates of any University in Her Majesty's dominions are admissible *ad eundem*, and are required to produce satisfactory certificates of good conduct and of their standing in their own University.

Candidates for Degrees, Scholarships, Prizes, and Fellowships of Honor, who have been students of any related Institution are required to produce certificates signed by the authorities of that institution, but attendance on Lectures is not required, as a qualification, by this University, except for Students in Medicine.

All Candidates, who propose presenting themselves at the ensuing Examinations, are required to transmit the Registrar, at his office, in the Parliament Buildings, the necessary Certificates, on or before Thursday, October 5th.

Information relative to the Subjects of Examination in other particulars, can be obtained on application to the Registrar.

Senate Chamber,
Parliament Buildings, Toronto, }
September 9th, 1854.

University College, TORONTO.

THE ANNUAL EXAMINATIONS will commence on Monday, October 2nd.

During the Academical Year, 1854-1855, Courses of Lectures will be delivered on the following subjects, commencing on Wednesday, October 25th:

Classical Literature Logic and Rhetoric—Rev. J. McCaul, L.L.D.

Metaphysics and Ethics—Rev. J. Beaven, D.D.

Chemistry and Chemical Physics—H. H. Croft, D.C.L.

Agriculture—G. Buckland, Esq.

Mathematics and Natural Philosophy—J. B. Cherriman, M.A.

History and English Literature—D. Wilson, L.L.D.

Natural History—Rev. W. Hincks, F.L.S.

Mineralogy and Geology—E. J. Chapman, Esq.

Modern Languages—J. Forneri, L.L.D.

Oriental Literature—J. M. Hirschfelder, Esq.

Information relative to admission, attendance on lectures, &c., can be obtained on application to the President.

N.B.—The Examinations which are to be held as above stated, are intended for those Under-graduates who have been Students of the College during the past year, and also for those Matriculants, who purpose entering the University of Toronto, by passing an examination in the subjects appointed for the Second year of the Academic Course in that Institution.

Occasional Students are admissible, as heretofore, without Examination.

Toronto, Sept. 20, 1854.

CHALLENGE.

\$1,000 to \$4,000 a Side!

Or in Friendly Competition.

IMPORTED "YOUNG LION" Within one Month after his Seasons over (due notice being given), is open to

WALK OR TROT 5 MILES AND UPWARDS.

Against any Stallion, Gelding or Mare, of his weight or more, in Canada or in the United States, imported or otherwise, and as so few Horses can be found to weigh with him, any horse weighing within 250 lbs. of his weight will be allowed to compete.

—ALSO—

At the same time, he will be open to TROT his Mile in less than FOUR MINUTES, in or out of Harness.

—ALSO—

At the same time, he will be open to draw any weight from Two Tons and upwards, from 5 Miles to 100, and return unladen in the shortest space of time, against any Stallion, Gelding or Mare of any class, size or weight, either in Canada or the United States, imported or otherwise.

—ALSO—

For Superiority of Action against any Horse of his Class wherever he can be found.

One Judge to be chosen from among the veterinaries of New York, one from Montreal and one from Toronto, whose services are to be paid for by the Winner.

The Trials to take place in the vicinity of Toronto; and all travelling expenses to be allowed to the Owner of any Horse that may compete coming from a distance.

W. B. CREW.

Toronto, May 27th, 1854.

6-6-17.

IMPORTANT TO FARMERS.

The Best and Cheapest Dressing for Seed Wheat.

PATRONISED by Members of the Royal Agricultural Society of Great Britain and by many of the first Practical Farmers in the Kingdom. Thirty-five per cent. is saved, and a good crop insured, by using

D. Clarke's Wheat Protector,

Which has been thoroughly tested for SEVEN SEASONS and proved to be A CERTAIN PREVENTIVE OF SMUT IN WHEAT, and an Effectual Safeguard against the Attacks of the SLCG, GRUB and WIREWORM.

Prepared by D. Clarke, Chemist, Woburn, Beds, England, in Packets sufficient for Seven Bushels of Seed.

It is peculiarly gratifying when we take a retrospective view of the past, and find it affords *present satisfaction, and abundant reason for future hope.* After Seven years' trial of his preparation, D. Clarke feels himself placed exactly in this position by the very numerous Testimonials to its efficacy which he receives from Practical Agriculturists throughout the entire width and breadth of the Kingdom, and by the steadily increasing sale which it commands notwithstanding the strenuous efforts of its opponents to lessen its sale by such Cautions as "Beware of worthless Imitations," and by lowering the price of the article it is said to imitate. An increased demand of upwards of 30 000 Packets the last Four Seasons, is a positive proof of its value, and a sufficient stimulus to the Proprietor to use every effort to maintain that decided superiority which his Preparation is acknowledged to possess over other Dressings for Seed Wheat.

AT A COST OF ONLY 1s. PER ACRE.

This Preparation will not decompose, but retain its properties for any length of time, if kept in a dry place. Seed dressed with it may be sowed directly, or if the weather prove wet, so as to prevent its being sowed, it may remain three weeks without sustaining any injury.

W. ROBERTSON, Port Hope,

SOLE AGENT FOR CANADA.

The following are a few out of the many Testimonials received:—

From W. Anderson, Esq., Bailiff to His Grace the Duke of Bedford.

OAKLEY, Sept. 10th.

Sir,—I beg to inform you I have now had an opportunity of examining both the winter and spring Wheats dressed with your Preparation, and in both instances, I am happy to say, not one single ear of smut is to be found; I can therefore, with satisfaction recommend it to my brother Agriculturists.

I remain, sir, yours, &c.,
W. ANDERSON.

Mr. D. Clarke.

NEWPORT, SALOP, Oct. 11th, 1850.

DEAR SIR.—Last year I disposed of a quantity of your "Wheat Protector," and am happy to inform you that the result of the late harvest proves it to be a very valuable preparation. In every case in which I have been able to make inquiry, I find that its character as a Preventive of Smut, Wireworm, &c. has been fully borne out by the experience of the past season. Richard Healy, Esq., of Dodecote Grange, informed me he had used it very successfully, and has found it answers every purpose for which it was intended. The great simplicity in the mode of its application is not the least recommendation in its favor, as thereby much time and trouble are saved; whilst its very moderate price is sufficient inducement for each and all to make a trial of it.

I am, yours respectfully,
HENRY CHALMERS.

Mr. D. Clarke.

Second Testimonial from E. W. Moore, Esq., Agent to the Earl of Radnor.

COLESHILL, HIGHWORTH, BERKS., August 23.

Sir,—I enclose you a post office order for the Packets of "Wheat Protector" I used last year; you can send me double the number of packets for this season, as I am perfectly satisfied with the result, and find this method of preparing the seed so simple, that I prefer it to the others I formerly used.

I am, Sir, your obedient Servant,
E. W. MOORE.

Mr. D. Clarke.
October, 1854.

Hydraulic and Agricultural Engineering.

MR. JOHN HENRY CHARNOCK, Hydraulic and Agricultural Engineer, (a Member of the Royal Agricultural Society of England, and author of his Prize Report on the Farming of the West Riding of Yorkshire, as well as other papers on Drainage, &c., published in his Journal; and late an Assistant Commissioner under the English Drainage Act) begs to offer his Professional Services to the City and Town Authorities, and to the Agriculturists of Canada, and to solicit the honor of their patronage and support.

Having for several years past devoted special attention to that branch of Engineering which embraces more particularly works of Town Sewerage and Water supply, the Drainage, Irrigation and general Improvement of Land, the planning and erection of Sewerage and Drain-pipe works, Farm Buildings and Machinery, together with the laying out of Farms and Ornamental Grounds, Mr. Charnock ventures to think that such experience, coupled with a practical knowledge of the approved systems and appliances of the day, will enable him to render valuable and efficient services to those who may favor him with their commands.

Mr. C. is furnished with testimonials from numerous parties of known standing and repute, which he will be happy to submit to those who may contemplate employing him. And all communications addressed to him, CITY OF HAMILTON, CANADA WEST, will have prompt attention.

JOHN H. CHARNOCK.

OFFICE, JAMES'S STREET, HAMILTON.—At Mr. Simons' Land Agent, close to the St. George's Hotel.
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