

to the rewards which had been distributed during the day to deserving labourers, said that he regretted to find that not one woman had come forward for the increased premiums offered for dairy servants. Many farmers regretted that this class of servants was not filling the position which it ought to do, and that many good dairies and good pasture grounds had been let down from the difficulty experienced in finding dairy assistants. He hoped that labourers with large families would have their daughters instructed in the industrious pursuits of the dairy. Adverting to the operations of the society, the gallant major added that the man who could produce 80 stone of beef in twenty-four months, and a sheep with six or seven stone of mutton and 17 or 18 lbs. of wool on his back in 16 months, deserved as well of his country as another who performed prodigies of valour. He saw many men around him who had effected what he had hinted at, and when he found these societies lead to such results, he could not but feel proud of them.

The "Members for the Borough."

Mr. J. C. COBOLD, M.P., in reply, adverted to the honourable position occupied by Ipswich and Suffolk with regard to the manufacture of implements, and called attention to the recent establishment in the town of a flax factory. He hoped the farmers of the county would grow more flax, and keep the machinery of this factory in motion. He believed they might do so profitably.

The "Royal Agricultural Society of England."

Mr. N. G. BARTHOROP responded, and observed that there was every prospect of the approaching Warwick Meeting being a most satisfactory one, the entries of all kinds of machinery, as well as stock, being very large.

Sir E. C. KERRISON, M.P., in replying to the toast of the "Vice President," said he rejoiced to find that an addition had recently been made at Ipswich to the number of farmers' clubs established in the county to discuss the breeding of stock and the management of land. The paper recently read by Mr. Bond before the Ipswich Club was deserving of the careful attention of all interested in the management of land. This paper did away with the notion that people who had heavy lands should deal with no other species of stock, whether they were dear or cheap, than heavy stock like bullocks. He (Sir E. Kerrison) thought the first thing to be done with these soils was to drain them well. Although there was a system of drainage in existence, yet, looking at the loans obtained from public companies, and Government, he believed there was less money expended in this respect in Suffolk than almost any other county in England. A great deal of land might be made available for sheep purposes which were now not so made available; and he proposed to give a special prize himself for drainers, that the many good labourers of the county might have an opportunity of exhibiting their skill in pipe-drainage as well as in ploughing. Mr. Bond, in his paper, spoke particularly of sheep having failed very well; and he (Sir E. Kerrison) believed at a late meeting of the committee of the association the question arose as to whether a certain breed of sheep should assume the name of "Suffolk" or not. It was decided that they should do so. Now in the matter of horses Suffolk was first-rate, for last year the horse which did not win the first prize at Bury St. Edmund's obtained the all-England prize at Chester. In the matter of cows, too, Suffolk had some excellent stock, which were very suitable for those pastures to which Lord Henniker had referred. With regard to the class of sheep which were to be called Suffolk sheep, he did not wish to say a word against them; he saw some excellent specimens exhibited during the day by Mr. Dobito, but he did not wish the breed to be employed merely because they had a black face and black legs. He wanted to see a Suffolk breed which had not only a black head and face, but which would increase in weight in proportion with other breeds. In support of this view of the subject, Sir Edward stated that he recently put up eight Cotswold sheep and eight of the Suffolk breed, as good as he could get them and of the same age. At the end of three or four months he found that the gain of the Cotswolds was 790 lbs., and the gain of the others only 670 lbs.; and he also found that the black-legged sheep—the sheep they cherished and wanted to call the Suffolk breed—had consumed nearly fifteen tons, while the others had consumed only thirteen tons. The Suffolk cost 5s., while the Cotswold cost only 3s. 3d.; and he had sold the latter while the former were still running about. He wanted the farmers of Suffolk, before they

took a breed and called it a Suffolk breed—before they invested their money in sheep merely because they had black legs and black heads, to take care and ascertain their fattening powers; then they might call them a Suffolk breed if they liked. Sir Edward, whose voice unfortunately prevented his being very distinctly heard, proceeded to refer to the rifle corps topic, in regard to which he endorsed the views of preceding speakers.

"The judges, and thanks to them for their services."

Mr. BARNETT, in reply, said the show reflected very great credit upon the county, particularly as regards the horse stock, of which those who had been in the habit of attending the society's meetings had never seen so fine an exhibition. Alluding to the Royal Agricultural Society, for which Mr. Barthropp had incidentally expressed a hope that he should have responded, Mr. Barnett added that that body might at the present moment have some little occasion to find fault, but he would only say that possibly any little error which might have occurred might be a stimulus to its future prosperity.

"The successful exhibitors."

Mr. G. D. BADHAM briefly expressed the pleasure which he said he had always felt in exhibiting animals of his own breeding at the society's meeting.

Major PARKER, M.P., proposed the "exhibitors of implements," associating with the toast the name of Mr. Allen Ransome.

Mr. A. RANSOME said, he had very great pleasure in expressing the gratification and satisfaction which he himself and those with whom he was associated felt, in knowing that their labours, and the direction in which they had been carried, had met with the kind approval of the members of the society. On the present occasion they had felt it their bounden and paramount duty to bring before the members as full and perfect an exhibition of implements as they possibly could, as the society had so kindly and willingly assisted them in carrying out the views which they had expressed in reference to showing implements at local shows; and he trusted that after looking round the show yard that day, and seeing the very best specimens which could be procured not only from the county of Suffolk, but also from implement makers in all parts of the kingdom, the members of the society would bear their testimony to the desire which he and his friends felt to promote the interest of the meeting in this respect. He believed that the course which had been adopted by the society in meeting the views of the implement makers (in regard to the absence of competitive trials for prizes) would stimulate other gentlemen who, considering the show as a purely local one, had hitherto held aloof, to make entries; and as time advanced and the interest in agricultural exhibitions increased, the members of the association would no doubt see at their meetings the best implements the country could produce. He could not but refer to one implement which had been exhibited during the day, *v. z.*, the steam-plough. Through very much discouragement, through a large amount of expenditure, through evil report and good report, the endeavour to effect the tillage of the soil by steam had at length, he was proud to say, been successfully carried through. At last such a state of perfection had been attained that he could unhesitatingly declare that every farmer who had a sufficient breadth of land to cultivate would make the use of the steam-plough advantageous. Accustomed as he had been from his very childhood to the mechanics of agriculture—his father and grandfather having devoted themselves to the subject before him—he could say with perfect confidence, well advised, and with careful deliberation, that great as had been the advantages which science had already afforded to the farmer, they were light in comparison with those which had been attained in the application of steam to the cultivation of the soil. They had had a specimen of what might be done; and although he did not desire to arrogate to his firm anything but a small portion of the merit of having been the means of carrying to a successful consummation the ideas of others, he heartily congratulated his agricultural friends throughout the world on the prospect which was before them. He would speak not merely of the reduced cost of tilling so many acres of land, but of the extraordinary advantage which steam-ploughing would afford them at a season of the year when their horses were otherwise employed, and when it was difficult to get this first great operation of agriculture performed, and of its adaptation to the heavy clay lands of the kingdom. Every one who had

farmed such lands was aware that the difficulty of cultivating such soil to a sufficient depth was increased by the fact that while their implements required something more than four horses to do what they wanted effectually, these four horses did more harm by their treading than the tillage did good. By means of steam a deeper culture might be readily and

easily secured, and he thought he was not too sanguine in saying, that in the cultivation of wet clay lands the accomplishment of a deeper and more perfect tillage would be found a very great advantage.

A few other toasts having been given,

The President vacated the chair, after a very long sitting.

AGRICULTURAL GATHERING AT BOREHAM.

A large number of agriculturists assembled on Wednesday, at Boreham-park, the seat of Sir John T. Tyrell, Bart., for the purpose of witnessing the operation of mowing-machines and other implements, intended to economize time and labour on the harvest field. Among those who responded to the kind invitations of Sir John Tyrell on the occasion were the Lord Rayleigh, Lord Kinnaird, Right Hon. W. Nesbit Hamilton, Hon. Mr. Justice Bennett (New York), Sir Robert Pigot, Bart., Sir Claude de Crespigny, Bart., Admiral Meynell, Admiral Mc Hardy, W. Ormsby Gore, Esq., Major Ormsby Gore, Esq., M.P., Wm. Becket, Esq., Colonel Boldero, H. Gataker, J. Hodgson, Philip Bennet, Henry Wigram, Benjamin Fitch (New York), Edgar Disney, J. Jolliffe Tuffnell, jun., J. Bramstone Stane, Charles Halesfoot, Francis Palmer, Thomas Kemble, W. Fisher Hobbs, W. M. Tuffnell, J. O. Parker, J. H. Blood, T. M. Gepp, H. Leigh, G. Hilton, G. Hilliard, Esqrs.; the Rev. C. J. Way; Captain Johnson, R.N.; Messrs. J. Wood, G. Hart, T. Crooks, T. Abrey, I. Perry, W. Tipley, T. Mee, Kemp, Malden, F. Chancellor, Pertwee, Clarke, Christy, Reeve, &c.

The mowing machines at work were two manufactured by Woods, and two by Burgess and Key, and half-an-acre of grass was allotted to each. There was on the lawn near the house the model of a new implement from America: "The Buffalo Mower and Reaper," exhibited by the engineer of the Hon. Mr. Bennet and Mr. Fitch. Mr. Coleman had in operation on the ground an improved steam-power chaff-cutter, with new knives, which take nearly a perpendicular cut, making the power to draw it very light, and with a new roller, by which it is impossible to clog. He had likewise an improvement on his cultivator, in which tines are placed behind the wheels, and there is also a new side lever, by which the depth of the side wheels is more easily regulated.

The guests were entertained by Sir John at luncheon, in a marquee on the lawn.

At the close of the repast, Lord RAYLEIGH proposed "The health of Sir John Tyrell," with thanks to him for his hospitality and entertainment.

Sir JOHN TYRELL, in returning thanks, expressed his great attachment to agriculture—to the scientific branch of it, he hoped, as well as to the practical; and it was most gratifying to him to see so many of his friends and neighbours, of all political views and shades of opinion in this county, meet on the occasion without any of those bickerings that sometimes took place elsewhere. (Cheers). They had a tremendous failure with the mowing machine last year; he was therefore anxious to see whether they could not mend the matter and do better this year; and having appointed three gentlemen, Mr. Seabrook, Mr. Pertwee, and Mr. William Clarke, to see what could be done in reference to practical agriculture, he should be glad to hear what their report was as to the working of the machines today. No doubt it was a subject of interest to be in a posi-

tion to see the implement that claimed the advantage amongst those which had been at work to-day. There was also a model of another, which they had no doubt seen, exhibited by gentlemen from the United States, and it appeared of a very scientific nature; but still it would have been more satisfactory to them if they could have seen the implement itself at work. This was a purely business meeting. He had no canvassing to do—he had nothing to ask of anybody; he had no more unmixed gratification than on seeing his friends met there as they were on that occasion; and if it was their pleasure to see any further experiments the cocker and the rakers should be set to work. (Hear, hear). He was told the labourers disliked mowing, which they called "shoulder work," and he hoped the time might come when they would not be called upon to go through so painful an operation. (Cheers and laughter). There were two gentlemen present, one of whom had the handle of "Honourable" to his name, and was a judge in his own country—a good judge, he should also say, of agriculture, or he would not have sent that first-rate model for their inspection, which he hoped was an earnest of what they should do next year. (Cheers). He begged to give the healths of the two American gentlemen to whom he referred—the Hon. Mr. Bennett and Mr. Fitch. (Drunk with three-times-three).

Mr. BENNETT and Mr. FITCH duly acknowledged the compliment.

"The Judges" having been toasted,

Mr. SEABROOK, in returning thanks, said he and his colleagues on the occasion had had little to do in making their decision, as there was no doubt as to which machine had done its work best. They were thankful to the Americans for introducing a mower that had done its work admirably, but every one must see that Burgess & Key's mower had done its work best, though with what they considered great labour, for it had two very powerful horses, and they had as much as they could carry. Still it did its work well. The little machine left an "outing;" but they thought, in proportion to the power used, it did its work the best of the three. They had also been shown the model of the American machine referred to, but Englishmen were jealous of giving an opinion on a model, and did not like to say a machine would do its work unless it was actually seen doing it. Had the machine been here, they might have tested it with the others. Of the three that were at work he should prefer the little one, with some slight alterations at the side, to make it cut its "outings." It should, however, be added, that the time was very much in favour of Wood's two-horse machine, which cut its half-acre in twenty minutes—that was an acre in forty minutes, or fifteen acres a day—while the one-horse, and Burgess & Key's, did the half-acre in thirty-three minutes.

Several other healths were drunk (including that of "The Ladies," by Sir CLAUDE DE CRESPIGNY), and the company

adjourned to the park, where the horse-rakers were at work gathering up the crop that had been cut.

Sir JOHN having gathered a circle around him, called attention to a matter in practical haymaking. Alluding to the different hay-rakers, and the improvements that had been made in them, he said none of them would clear more than 2½ feet in height. Therefore, he came in with a wooden rake, partially invented by himself, for it was the old Huntingdon implement, and he attached to it a twitch rake, which was now a matter of history—(laughter)—for not being now an arable farmer he did not want it any longer—(renewed laughter)—and with this he could clear 4½ or six feet into the air, while, as he had said, the other

rakes would not clear more than 2½ feet. Thus, with this implement, if there came rain, he could clear four acres while the other rakes would only clear about half that space.

The cooker, mention of which was made at luncheon, was then set to work, and its advantage was seen in the rapid manner in which it laid hold of the scattered crop and drove it into high heaps, so that a man following with a fork could at once complete the cock; and thus a large breadth, in case of storms threatening, could be speedily secured.

The proceedings, we need hardly say, afforded unmixed gratification to all who had the opportunity of witnessing them.

THE MALT-TAX AND THE LABOURER.

SIR,—The letter of your correspondent, who signs himself Thos. Rose, jun., which appeared in your last week's impression, although decidedly clever and satirical, appears to me ingeniously to have put things in a wrong light, and to have taken too one-sided a view of the question at issue.

Mr Rose finds fault with the following sentence, taken from a lecture "On the Profession of Agriculture, &c.," lately delivered by Mr. Bond, of Kentwell:—

"To me it is perfectly clear, that the poor man—with his difficult practical problem to solve, with his wife, children, and himself to be maintained upon his 8s. or 10s. a week—beer is a necessary comfort rather than a superfluous luxury."

Mr. Rose in this simple sentence appears to find problems greater and more difficult to solve than are to be found in that useful book, "The Elements of Euclid." Well, it is an astonishing fact, that a great philosopher may often be perplexed by a difficulty which would not puzzle a child; however, if Mr. R. will allow me, I will try to answer his questions by endeavouring to explain what I understand to be the meaning of this very obscure and enigmatical passage which he finds so great a stumbling-block. Mr. Rose asks, 1st, "How beer can be proved to be a necessary comfort?" 2nd, "What necessary comfort has to do with 8s. to 10s. a week?" 3rd, "Is beer more nutritious and less expensive than solid food?" And 4th, "What is the nourishing property of beer?" He then endeavours to prove, by various little arithmetical sums, that beer is not so nourishing as wheaten flour; goes on to say, that as Mr. Bond calls beer "the poor man's especial beverage," so he (Mr. R.), from the large amount of gin consumed in town, would call this spirit "the drink of the people," and says that, reasoning from analogy, if we abolish the malt-tax for the benefit of the labourer, we ought also to banish the excise officer for the benefit of the town population; and concludes his letter by ironically supposing, that if beer and spirits were cheaper, drunkenness and crime would decrease.

Now, Sir, I cannot pretend to write such a clever letter as your correspondent, but feeling strongly as I do that I am writing on the side of truth, I will endeavour to answer him.

I think that beer may be proved to be "a necessary comfort rather than a superfluous luxury." Let any man who doubts this live as an English labourer has to live when his family is large, and wages are low; i. e., let him take a large amount of physical exertion, and abstain from meat and all other stimulant. No one but he who has tried it knows what a craving there is in this case for stimulant of some kind. No one but he who has tried it can properly understand how it is that an

English labourer has such a strong liking for beer; and no one but he who has lived long in an agricultural district can sufficiently understand and admire how it is that so many of our labourers feeling this violent craving a strong temptation to enter the beer-shop (the only place where many of them can obtain their favourite luxury), yet so nobly and manfully resist it. When we consider the natural effects of the drugged beer of the publican we need not wonder at the extent of drunkenness and crime (the seeds of which have been sown at the beer-shop), but rather wonder that it is not five times larger in our country districts than it is. I believe the result is entirely owing to the forbearance and self-government of the agricultural labourer, which is not nearly so much recognised as it should be. To the man who has it in his power to eat meat daily, beer may be a luxury. I do not deny it; but O ye who would deprive the poor man of a great comfort in your mistaken benevolence. Try physical labour yourselves on granivorous diet, and then, and not till then, can you fairly pronounce what is a necessary comfort to the poor man, and what a superfluous luxury.

To Mr. Rose's next question—"What necessary comfort has to do with 8s. to 10s. a week?" I would simply remark, that low wages will not allow a labourer with a large family to indulge in a sufficient quantity of meat; he consequently feels a stronger craving after other stimulus.

To the other questions—"Is beer more nutritious and less expensive than solid food?" and "Wherein does its real nourishing property consist?" I would reply, that, strictly speaking, beer is not so nutritious as food, for we know that a man can live without beer, but not without food. Beer is a stimulant, and like other stimulants, as tea, coffee, &c., it does not entirely usurp the place of food, but it enables us to do with a less amount, and to enjoy that less amount with greater zest. If there is no use in stimulants, why then do doctors prescribe port wine, pale ale, &c. as tonics? From ignorance, or is it that they know from experience that such treatment generally has a happy effect?

But to take a practical illustration, let us take two sets of labourers, four or five men in each, engaged at the same sort of work. Set No. 1 shall be allowed homebrewed beer, in moderation; set No. 2 shall have no beer; in other respects their diet shall be the same. How will they work? Nearly every farmer can testify from his own experience that the former will do a larger share of work with greater good humour and less fatigue, and on the next morning will be more fresh and ready for work than the others. But chemists tell us that meat itself is a stimulant. Prof. Johnston (Lectures on Ag.

Chemistry and Geology) states that lean meat contains 77 per cent. of its weight in water, while wheaten flour contains only 15 to 17 per cent. of water—a great difference; and several eminent French chemists assure us that meat is not so nutritious as bread, and that the utility of meat consists in its stimulating properties.

In another place I have quoted the "Chemistry of Common Life" to prove that, in all parts of the inhabited earth, the universal feeling of mankind demands some kind of stimulant. Then why should the English labourer be required to live without any? Or, why should a legislative enactment drive him to the beer-shop, instead of allowing him this "necessary comfort" at his fireside? If by law we can so regulate matters that every labourer can have meat daily, they will not complain; if we cannot, let them have cheap malt.

To Mr. Rose's concluding remarks I would say, that there is little analogy between gin and beer; true they both contain alcohol, and if a man imbibes a sufficient quantity of either it will make him drunk; but, as Fluellen says of the rivers, in his amusing comparison of Macedon and Monmouth, "There

is salmons in both," so one likeness does not prove that the analogy is the same in other cases. A man ought to take beer for "strength, and not for drunkenness;" it might form part of his temperate and healthy meal, and it would do so more often were the malt-tax abolished. But what are the good effects of gin? Few indeed in comparison with the evil. We know too well its general effect on the London poor; we know too well the squalor, the unhappiness, the misery, the ruin it brings. The Arabs of our streets—the miserable, the thief, the prostitute, and the murderer—carry the proceeds of vice to the gaudy gin-palace, and forget their misery for the moment in the ensnaring glass, only to feel the more wretched and miserable when they wake from their drunken stupor. I cannot see any benefit in cheaper gin; but give the agricultural labourer the means of brewing his national beverage at his own cottage, and I repeat it, in rural districts drunkenness and crime will decrease.

Apologising for the length of my letter, and enclosing my card for your private satisfaction, I am, Sir, yours obediently,
I. R.

ALEXANDRE DE HUMBOLDT.

[TRANSLATED FROM THE FRENCH OF THE "JOURNAL D'AGRICULTURE PRATIQUE."]

The life of Alexandre de Humboldt is written in every book consecrated to science, letters, and the arts. Possessing an enlarged mind, an indefatigable worker, endowed with extraordinary erudition, versed in botany, geology, astronomy, physics, chemistry, geography, the ancient and modern languages, political economy, the philosophy of all human knowledge, this for ever illustrious man has left indelible traces in the scientific revolutions of the eighteenth century, which he saw completed, and of the nineteenth, which he has accompanied beyond the half. But in order to delineate so learned a man, and give a complete appreciation of his labours, we must, in following his works line by line, give ourselves up to deep meditations, and consecrate long days to a study which will certainly be fertile in instruction. At this moment, in which his coffin has scarcely passed through the crowd, who run to cast laurels upon it—a crowd of peasants, citizens, learned men, warriors, princes, and royal personages—it may not be proper, as the selection which these lines will contain might otherwise require, to search out and tell the general influence exercised by M. de Humboldt over the progress of science, and particularly that of agriculture. Perhaps it is this that may entitle us to a pardon for our rashness in improvising a notice of such a man. We are not accustomed to consider agriculture as capable of receiving even a reflection of the movements produced in civilization by great intelligences. And certainly few persons are disposed to admit that M. de Humboldt has contributed to the progress of agriculture which distinguishes our age. It is so, nevertheless; and it is not one of the least of the glories of that great man. In fact, all things meet in agriculture, because all proceed from it. If a strong impulse is given to the progress of human knowledge, the science of production must feel it; and besides, there are perhaps no men who can be more useful to agriculture than travellers who observe, study, and discover the laws of life on the surface of our planet. Now, M. de Humboldt has been the greatest of observers amongst travellers of modern times.

Frederick-Henry-Alexander baron de Humboldt was

born at Berlin the 14th September, 1769, and died in that city the 7th May, 1859. He was the son of an officer who served in the seven years' war as Adjutant of Duke Ferdinand of Brunswick, and of a mother descending from a French family who quitted Burgundy upon the revocation of the Edict of Nantes. He thus inherited from his cradle the force and fulness of the German character, and the generosity of the French heart. Having completed the most brilliant literary and scientific course of studies, under distinguished masters, he composed, in 1789, an erudite memoir on the manner in which the Greeks wove their stuffs, and a work on the geology of the countries bordering the Rhine. It was the epoch in which chemistry under Scheele, Priestley, Lavoisier, Berthollet, &c., achieved a great revolution, and passed definitively from empiricism to the exact observation of facts susceptible of serving as a basis to fruitful doctrines. It was the period also in which botany was all at once enriched with numerous families, by the comparative study of plants of various countries, and in which sprung the fossil flora. Geology was founded under Werner, Leopold de Buch, and others. Lastly, the experiments of Galvani opened a new world to the researches of the physician and the physiologist. The intelligence of M. de Humboldt was powerfully excited by these discoveries, and he published, one soon after the other, a subterranean flora, and a work on the irritability of the muscular fibres; and at the same time becoming the fellow-labourer of the great poet Schiller, he developed under a mythical form his first perceptions upon the vital forces, or what he calls "the Rhodian Spirit" (*Genie Rhodien*).

But in order to demonstrate the truth of his ideas, it was necessary that the bold young man should dive into the secrets of Nature in all parts of the world; and he prepared himself, by diligent study, for undertaking the travels which were likely to afford him his illustrations. He accustomed himself to the practice of astronomical observations, physics, and chemistry. He understood the use of the telescope, the compass, the barometer, the crucible, and the microscope; and it was necessary for him to take with him

the instruments of investigation of all the sciences. It was only after this laborious apprenticeship that he considered himself qualified to set out. We cannot follow him in all his travels, and shall only say that he went with M. Bonpland into Spain in the winter of 1798-9, that in the middle of the summer of 1799 he made the ascension of the Peak of Tenerife, and that he was found a few days later at Cumana on the American soil. This was the theatre he desired for his researches. His principal object was to discover the junction of the Orinoco with the river of the Amazons, respecting which eminent geographers had expressed doubts. M. de Humboldt did not hesitate to clear the most abrupt cataracts, and to navigate waters never before seen by Europeans. Having established the correctness of his views on this important geographical question, he set out for the island of Cuba, and from thence transported himself to Peru, studied with intrepid attention the Cordilleras of the Andes, the volcanoes of Quito, the Plateau of Bogota, made in June 1802 the ascent of Chimborazo, and reached the elevation of nearly 6,000 metres (19,685 feet), the highest point to which any person has yet ascended. He then went through Mexico, returned to the Havana, and finally to Europe, after an absence of five years.

The results of this memorable scientific expedition were enormous, and are recorded in a monumental work comprising 26 volumes—an encyclopædia rich in materials, which will form, for a long period, a mine for the working of all the learned. It was on this voyage that M. de Humboldt collected and brought home the first specimen of guano that had been seen in Europe, and which was analyzed by Fourcroy and Vauquelin. M. de Humboldt described accurately, in 1804, the Chincha Islands, from whence come almost all the guano now employed in agriculture in Europe. He pointed out the immemorial use of this substance, as manure, by the Indians, and imitated by the Spanish conquerors of the new world. It was also this journey which enabled the illustrious *savant* to compose his splendid work on the geography of plants, and to enrich botany with valuable memoirs of a great number of vegetable families, amongst which are the leguminous and gramineous. We find, therefore, that Agriculture ought to place the name of Humboldt amongst those of its benefactors. Let the cultivators read an admirable little work entitled “Tableaux de la Nature” (Sketches of Nature), and they will learn to love this man, who has described so well the phenomena of the life of the plants and animals which people our planet, in the most beautiful of its manifestations. Those who daily contemplate the lands they cultivate, will find a peculiar charm in nice and intricate comparisons between the various aspects of the earth under its different latitudes. There we meet unexpectedly—as in the “Cosmos,” the last great work of M. de Humboldt—with the most ingenious views relating to the reflex action of the exterior upon the interior world, on the end of man, on the laws by which Nature is governed here below, and on the planetary and stellar spaces.

We owe also to M. de Humboldt other works having a direct relation to agriculture. It was he who, in conjunction with Gay-Lussac, by a new method, still employed in the analysis of the gases, established the constancy of the composition of atmospheric air—certainly the most important discovery yet made upon the constitution of the atmosphere. It led to the discovery of the part or use of oxygen in the respiration of animals, and that of carbonic acid in the existence of plants. M. de Humboldt has also ascertained the laws of the distribution of heat on the surface of our globe. He has constructed imaginary belts

of equal temperature, termed *isothermal lines*, which serve to define the climates, and has thus determined the limits of the cultivation of plants, the necessity of hot or temperate houses, and the precautions to be taken in the acclimatization of vegetables.

On his return from the New World, M. de Humboldt allied himself in the most intimate friendship with all the great men of our country (France), and he adopted it for his second native land. He lived more than twenty years at Paris, quitting it only for scientific expeditions; or to bring to a bearing, difficult diplomatic negotiations, which kings were induced to trust to him, because he had the art of uniting men, of appeasing their discords, and rendering them favourable. Was it possible for two friends of Humboldt to remain enemies to each other?

In the meanwhile, in 1827, Prussia deprived us of the great scholar, a member of the Institute of France from 1810. But he stayed at Berlin in the first instance only two years, and then set out on a journey across the unknown countries of Central Asia; which, we may say, he discovered, as he had made the scientific discovery of the New World. He dissipated the numerous errors accumulated in the old systems of geography, respecting the cradle of the world; and established the general nature of the laws which he had found in America, upon the meteorological constitution of our globe. On his return from Asia he continued his valuable publications; and henceforth occupied among the learned the position of the revered patriarch. He was then already sixty years old and upwards, and we have had the happiness of possessing him still thirty years in the world, which has enabled him to leave us such vast works that M. Hoefer has, with the unanimous approval of the whole learned world, called him “the modern Aristotle,” in a splendid memoir in the *Biographie Generale*, published by Messrs. Didot.

The day after the decease of M. de Humboldt, before that his mortal remains were removed to repose in the Park of Tegel, near those of his brother William, the French Government honoured itself by decreeing that a statue should be raised to him in the Galleries of Versailles, in the midst of the greatest glories of France.

The heart of M. de Humboldt was of equal expanse with his intelligence; he was always good and generous. How many young students owe their advancement to him! He helped them with his influence and his purse, and displayed even an extreme anxiety to oblige them. When M. Bousingault was about to start, in 1820, for the New World, whence he also has returned with honours, M. de Humboldt made himself the fellow-student of his young competitor, in order to teach him the use of those same instruments which he himself had used in the interests of science with so much *eclat* twenty years earlier. Whenever a young man addressed himself to him, he expressed an eagerness to do all in his power to be useful to him. We shall allow ourselves to relate a personal fact. In 1844 we presented to him, at Berlin, a letter from his illustrious friend, M. Arago; in the evening, this aged man of seventy-five sought us out, to give us ten letters of recommendation, which he had hastened to write in order to facilitate our introduction to the savants, and other great personages of Germany. He was thus with everybody, affable, conversable, witty, and cheerful; benevolent, complaisant, generous. At all times he advocated the cause of liberty and freedom, and he loved the people as men. Three weeks before his death—before that death whose approach he had foreseen, and had foretold for 1859 (in a letter written in 1857)—he wrote to M. Bousingault: “I do not love war; but if it must break out, I cannot help expressing the most ardent wishes for the independence of Italy.”

J. A. BARRAL.

REVIEWS.

JOURNAL AND TRANSACTIONS OF THE BOARD OF AGRICULTURE OF UPPER CANADA, VOL. II.

Toronto: Thompson and Co., 1858.

CANADIAN AGRICULTURIST AND JOURNAL, AND TRANSACTIONS OF THE BOARD OF AGRICULTURE OF UPPER CANADA, MARCH, 1859.

Toronto: Thompson and Co.

The prosperity of a new country like Canada is best ascertained through the progress it makes in agriculture. The first duty of a colony is to occupy and cultivate the land for a subsistence; and when that object is attained, to endeavour to secure markets for the disposal of a surplus of produce. The one is the dictate of self-preservation; the other, the desire of accumulation. It is not until a new nation feels itself strong enough by the attainment of the latter object, that a portion of its resources can safely be devoted to other objects; and it then becomes a question of policy, determined by the relative price or value of labour, whether it is advisable to establish manufactures of articles that can be obtained of older states much cheaper, and in exchange for the products of agriculture. In a new country where land is abundant and cheap, the legitimate employment of the people is agriculture, and every portion of labour employed in manufacture retards, to that extent, the progress of the cultivation of the soil and the occupation of the land.

We have a notable example of this in the case of the United States. It has been thought advisable to establish manufactures at an expense to the people of not less than from twenty-five to thirty millions sterling per annum; whilst at the same time labour is so dear, that the proper cultivation of the land is neglected, and the produce is consequently yearly falling off. Hear what the Hon. Horace Greely stated at an agricultural fair recently held in Fayette County, Indiana, on the subject.

"It is a melancholy truth that while the acreable produce of Great Britain has increased at least fifty per cent. within the last century, that of the United States has actually fallen off! With all our boasted progress, our fairs and premiums, our books and periodicals treating wholly or mainly of agriculture, our subsoil ploughs and vastly improved implements, our self-glorifying orations and addresses at gatherings like this, and our constant presumptions and assumptions that no people were ever so enlightened and free from antiquated prejudices as ours—this is the net result. Even I can remember when the New England farmers grew wheat as an ordinary crop; now you shall not find a patch of wheat grown this year or to be grown next, on one New England farm in five hundred. Thirty-five years ago, when I was a boy employed at land-clearing in Western Vermont, I used to see thirty or forty wheat-laden waggons pass daily in October and November, on their way to market at Troy or Albany; now, Vermont does not export a bushel of wheat, but imports at least two-thirds of the flour consumed by her people. In those days, western New York produced larger crops of wheat than any other section of our union; and 'Genesee flour' was about the best that could be bought anywhere. To-day, New England not only does not, but could not, by her ordinary processes, produce eight bushels of wheat to each arable acre; while the product of my own State does not exceed ten bushels from each acre sown.

"We are quite likely, before the close of this century, not to be able to grow enough for our use. Our longest cultivated soil is, on the average, far poorer this day than it was when Columbus first set his foot on the shore of the New World,

and the larger part of it is steadily growing worse. Old Jamestown, the site of the first attempt of Englishmen to colonise North America, could be bought to-day for less than it was worth in John Smith's time; and Plymouth Rock, though not quite so badly run down, cannot prudently take on airs at the expense of her rival. There are hundreds of square miles together of Maryland, Virginia, and the Carolinas that yield absolutely nothing, and are scarcely worth taking at a gift; that is to say, it would be cheaper to buy good lands at 50 dol. per acre, than to take those at a present and make them worth as much as the former. In whole sections they know no other way of renovating worn-out fields than to throw them into commons, and let them grow up to bushes, and ultimately to wood, then clear and start afresh—which is a little behind the agricultural wisdom of the days of Moses."

The above is a valuable lesson for Canadian farmers, of which those of the Upper Province do not fail to avail themselves. The agricultural reports will be read with interest by those who have the welfare of our Canadian brethren at heart. The agricultural associations are sustained with great spirit, and the best proof of their efficacy in promoting an improved cultivation of the land, is found in the increasing quantity of produce exported and the large acreage yield of the land. The opening up of roads and water-ways for getting the produce to market has involved heavy expense to the young colony, but the money could not have been expended on a better object, and will soon be repaid by the great facility it affords for reaching the Atlantic coast, which is now within a few hours' journey of any part of Canada, by the Great Trunk Railway.

The "Canada Company" is the subject of some severe animadversions in the first of these Journals. Their operations appear to have been conducted on a system, profitable enough to the company, but inimical alike to the interests of the country, and fatally so to those who have been unfortunate enough to take leases of their lands—for they refuse to sell, because as the country becomes more densely inhabited the land becomes more valuable. Eleven hundred thousand acres of the finest land in Canada (the Huron district) in one block was sold by Government to this Company at 2s. 10½d. per acre. This land is now valued at 12s. 6d. per acre to the lessee, who is charged a rent of six per cent. upon that sum. Thus, if a man rents two hundred acres of uncleared land, he has to pay £7 10s. interest, and in ten years to pay the whole purchase money, £125, or be further saddled with 25 per cent. upon the purchase money, or in default, the land reverts to the Company. Most of the lessees being poor, and having to clear the land, were unable to pay even the interest or rent, much less the purchase money, until four or five years ago the advance in the price of corn turned the scale in their favour and enabled them to fulfil their engagements. It ought to be added that although hundreds of lessees have become defaulters, the Company has not availed itself generally of its power to dispossess them; but, that the system they pursue is narrow, selfish, and inimical to the welfare of the Colony, is admitted on all hands.

Canada we have always considered the most important and valuable colony under the British Crown; certainly the most of a home to the English emigrant. He there meets with familiar faces, and familiar names of towns and counties. There is something attractive and soothing to the feelings of the wanderer from his native land thus to find a second England, two or three thousand miles away, with all the advantages of

exemption from the burdens of the "Old Country;" whilst in the agricultural institutions he finds an exact counterpart of what he has left. England has a peculiar interest in the prosperity of Canada, and we cannot but rejoice to find these institutions so vigorously and efficiently sustained.

"THE WAY TO BE WELL"

By HORATIO GOODDAY, M.R.C.S.

(London: Hatchard and Co., Piccadilly.)

This is a clever and important compendium of the means of promoting health and longevity, comprising in about one hundred pages 12 mo. all that is valuable in the wire-drawn work of Sir John Sinclair on the same subject, which fills two or three thick octavos.

Dr. Goodday, in his introduction, justly states that although the efforts of the Government may do much to promote the physical welfare of the community at large, it is only by individual attention to the means of preserving health, that the benefit of the more public arrangements for that purpose can be available. The requirements he enumerates are: "Intellectual, moral, and religious culture in relation to God, ourselves, and fellow-creatures; a pure atmosphere; protection by dress and habitation against extremes of heat, cold, and damp; alternate exercise and rest; clean linen and diet." These are the principles inculcated in the little work, and enlarged upon under the following heads, viz.—

The Sabbath Day—The Atmosphere—Ventilation—Temperature and Humidity—Dress—Cleanliness—Exercise and Rest—Food—Tobacco-smoking—Excretion—Medical Aid.

In placing the Sabbath day and its due observance as a day of rest and of moral and religious culture, the writer has struck at the root of nearly all the evils destructive of the well-being of society. Assuredly, as a rule, it is amongst the habitual Sabbath-breakers that we may look for the drunkard, the uncleanly—the neglecter, in short, of all those laws by which the physical endurance of man is promoted. Dr. Goodday justly observes that, "As a WEEKLY REST, the Sabbath day is necessary to restore what the previous six days' toil has exhausted of the physical and mental energies. This rule applies to all who live by labour of mind or body." "On the other hand," he says again, "it is because God's Sabbath is dishonoured, and the Christian virtues are not cultivated, that life becomes so often a tessellated stage of strife, anger, malice, revenge, jealousy, mortified pride, remorse, despair, selfishness, drunkenness, debauchery, and other vices." We have no hesitation in adding our firm belief that if the Sabbath day was universally observed, as it was originally designed to be, there would be more people live to the age of a hundred years than now die at seventy. We strongly recommend this little book to the attention of our readers.

FARM INSECTS; being the Natural History and Economy of the Insects injurious to the Field Crops of Great Britain and Ireland; and also of those which infest Barns and Granaries, with suggestions for their destruction. Illustrated with many hundred figures on steel and wood.

By JOHN CURTIS, F.L.S., Honorary Secretary of the Ashmolean Society of Oxford, and of the Entomological Society of France, &c., &c.

(Blackie and Son, Glasgow, Edinburgh, and London.)

Whilst chemical and mechanical science have justly obtained a permanent footing with the agricultural classes, and even botany—abstruse and intricate as are the nomenclature [of

families, tribes, and species—has received considerable attention from them, the science of entomology, which is of equal or rather superior importance with this latter, is almost an unknown language. The extent to which agriculture annually suffers from the devastation of the insect tribes, is incalculable; and it might be supposed that the special attention of the practical farmer would have been directed to the subject, in order to acquire a knowledge of the habits, mode of propagation, and means for destroying, these pests of the farm. Yet, we go on year after year suffering from these ravages, and looking on with a sort of sullen despair, as to the utility of any method for their prevention or destruction, or any investigation into their natural history and economy. Mr. Curtis, who stands at the head of British entomologists, is therefore performing an act of grace to agriculturists in bringing his extensive knowledge and intelligence to bear upon this subject, so replete as it is with interest and importance to them.

This work will be comprised in eight parts, each of which will contain two engraved plates of insects, and numerous other illustrations. It commences with the "Turnip crop," and the numerous enemies with which that plant has to contend, from the development of its first leaf to its approach to maturity. It is, however, in the former stage of its existence that it most generally and fatally suffers from the ravages of the "fly," which is a small black or brown beetle, sometimes striped, of the Coleoptera order. It bears the various names of fly, beetle, flea, black jack, and the classical or scientific one of *Altica nemorum*, alluding to its jumping, and its inhabiting woods and groves, previous to the turnip culture in this country. A complete history of this little destructive is given in the work, with the various expedients employed for its destruction. We are glad to see that, amongst these, Mr. Curtis has revived the "Paul-net," which we believe to have been a complete cure when perseveringly used as soon as the "fly" made its appearance.* It was exhibited at Holkham about the year 1808, and was patronised by Mr. Coke; but it was not generally adopted, on account chiefly, we believe, of its occasioning some additional trouble to the farmer. It is only by perseverance that any good can arise from the use of this or any other means of cure. The importance, however, of the turnip crop and the extensive loss of that crop of late years, would, we should suppose, induce a farmer to try every expedient to prevent it in future. Mr. Curtis states that in Devonshire alone, in 1786, 100,000 acres were destroyed by it; and we know that last year many farmers had to sow the land three times, on account of its ravages.

Various methods are recommended for its destruction, in the work before us, amongst which we do not see that of drilling rape or even charlock seed midway between the rows of turnips, taking care to steep the rape or charlock some hours before sowing, in order that they may come up first; and when they are up, and the fly at work upon them, use the Paul-net, by which the field may be cleared of them before the turnips appear. Some farmers sow these seeds with the turnip-seed, because the fly is more fond of them than of the turnips; so that while they are devouring them, the latter grow out of their way; but this is a dangerous expedient.

Perhaps, after all, the most effectual mode of preventing the destructive ravages of the turnip-fly is to ensure as rapid a growth as possible, and to put in plenty of seed. The latter

* Mr. Paul (of Sturston, in Norfolk), the inventor, never lost a crop of turnips by the fly after he employed the net, or rather bag. He also invented a net for taking aphides, or green lice, off the beans, and has taken as many as twelve bushels off a small field of about six or eight acres. The writer knew this gentleman well, he being a relative of the family.

plan will give trouble to the hoers; but of course the more plants there are, the more likely is it that some will escape.

The turnip saw-fly, the parent of the black caterpillar, is another of the most destructive enemies of the turnip, but its appearance is endemic and at few-and-far-between periods. Although this fly has become naturalised in Great Britain, we believe that it is a native of the continent, from whence innumerable swarms arrive at times on our coasts, especially those of Norfolk, on which they have been seen on arrival lying two inches deep on the cliffs, quite exhausted after their flight from Norway, Holland, or France. Marshall, in his "Rural Economy of Norfolk," has given a long and interesting account of this insect, to which Mr. Curtis refers. This voracious intruder upon the farm makes as quick work with a field of plants after they are hoed out, as the fly does with it in its first stage of growth. In 1835, which Mr. Curtis denominates the "canker year," it appears to have been more general than was ever known before, and to have committed greater ravages; its visit lasting from the middle of August to the

latter end of October. Well may the farmers dread the appearance of this pest.

The most effectual remedy proposed is the employment of ducks and chickens in large numbers. Where this remedy has been applied the turnip crop has been saved; and the only difficulty is in collecting a sufficient number of those birds to produce the effect. Other remedies have been resorted to, but none have proved so effectual, and attended with so little trouble or expense.

The present remarks apply to the first number of Mr. Curtis's work, in which the subject is amply discussed, and cannot fail of proving both interesting and useful to the farmer, being a practical as well as a scientific history of all those enemies to agriculture, whose legions baffle his efforts and neutralise his most skilful arrangements. The remedial measures proposed are suggestive rather than dogmatic, and embrace the practice of some of our most eminent agriculturists. We shall notice the succeeding numbers of the work as they appear.

EXHIBITORS' ERRORS AND JUDGES' DUTIES.

The season has now fairly set in, and the agricultural "public" have been very busy of late. In fact, they have been almost too much so. Gentlemen in authority and stock of repute have been hurried here one day and there the next, with rather more haste than was altogether convenient or desirable. We have only to trust that the newly-established Society in Essex and its elder brother in Norfolk will not get to loggerheads, but for the future so arrange their meetings as to accommodate rather than to embarrass each other. Nothing could be possibly easier than to determine on a few days' grace between the two. Both Associations would of course be all the better for such an understanding, while just a line early in the year from one Secretary to the other would put everything straight. There was no valid reason that we know of why the meeting at Swaffham should be held on the Wednesday, and that at Colchester on the Thursday in the same week. No doubt both suffered something from so untoward an opposition, and the Essex, Norfolk, and Suffolk Societies must henceforth settle their several show days so as to aid and not to impede each other. It is simply the difference between "feeding" and starving; and there are few such Institutions strong enough to fight it out to the last after the admirable example of the Highland and Yorkshire administrations, who have succeeded this year again in coming into collision. A word on this we should hope would be sufficient. True, that the indefatigable Mr. Torr can arrive from Swaffham in Colchester at two in the morning, and be on the show ground at seven. Admitted, that Mr. Sexton's Cotswold performed yet more wonderful feats in the way of casting his coat and changing his quarters. The common run of us, however, are scarcely equal to this, and many a man who otherwise might have visited both meetings seldom cared to do so when he found he had to be abroad

half the night to accomplish it. Even railway travelling may be a little overdone.

It would, indeed, have been far easier to have struck out for the Land's End, and have witnessed the very successful meeting of the Cornwall Agricultural Society at St. Austell. We notice this as remarkable not merely for the good breeds of stock that are now developing themselves in those remote regions; Devons, Shorthorns, and Herefords all apparently flourish there. The show, however, was yet more noticeable for the home-truths which it gave rise to. Neighbour-exhibitor and stranger-visitor met one and the other with the famous Cornish hug. Either went in at once for the throw. Said the natives, when they saw how the awards were placed—"The sooner these fellows are packed off again to Devonshire, or wherever else they came from, the better." The judges, in reply, defended themselves in this wise:—Captain Tanner Davy, on behalf of the judges of the Devon cattle, said: "I beg to thank you for the honour you have done us. I hope our decisions have given you satisfaction; they have satisfied us, and I hope they have satisfied you. I don't much care whether they have satisfied you or not. You put the matter into our hands to decide. I knew no person in the county; I knew no person's stock. We decided according to the best of our ability. No doubt there must be dissatisfaction, because every exhibitor going into a show-yard is prepared to look with a very powerful magnifying-glass at the good qualities of his animal, and he does not see any defect. We (the Judges) must apply powerful glasses to see the defects, and must award the prizes to those animals that possess the greatest number of good points—the greatest quantity of beef on the most valuable parts. As soon as my decisions were over, I took off my badge and walked about the yard to hear the remarks. One hot-headed

old gentleman said we ought to be put in the train and sent off to Devonshire. I asked him to be kind enough to tell me what it was all about; he pointed to a second-rate bull in the old class, and said it was better than the first-prize bull. I said, 'Why it is a year and four months older, and yet it girths only one inch more; and that is very little for an animal to grow in a year and four months.' That he admitted; 'but' he said 'tis a better bull altogether.' I told him the first-prize bull was of very much better quality, from head to tail. He said he had nothing to say to that, but the other was a better bull. On that I said 'I have nothing more to say to you,' and we parted company. —Some of our friends have remarked that Cornishmen have been found fault with, for not knowing how to farm. But they know how to make young bulls very fat at a very early age. There's no doubt of that. My friends and I have often before been called on for this sort of work; and therefore Cornish fat could not entice us from certain animals which had tendency to fatten. I contend it was our duty as Judges, not to be led away by fat animals, but to see if there were not other animals, in fair condition, with a tendency to fatten, and of much more even shape. I would draw attention to the first-prize bull and the third-prize bull in the second-class. They would be called by some persons two small, poor little things. But why? Only because so many cwt. of oil-cake had not passed through them. Put as much oil-cake or other nutritive matter into them, and put them side by side with others, and then see how they would look. But, you know, fat will often cover deficiencies. These little animals that we have awarded the prizes to were not fat, but they have tendency to fatten, and it would require more powerful eyes than I possess to point out any deficiencies in their present state. I should not be afraid to meet any gentleman dissatisfied with our awards, and if he would walk about the yard with me, I would fight him, from head to tail, as to any animal that has won a prize. There was among the cows an animal that you may wonder did not get a prize. We did not notice her at all. One gentleman informed me we did not know any thing about it. I replied, 'Very likely not,' but I said, 'The prize is offered for Devon Cows, as milking cows. This cow is owned by a gentleman I have known many years. She is a very beautiful animal—of beautiful quality, and the best shaped cow in the class, in my opinion. But she gave milk only at one teat; and I did not consider that a cow so injured was a fit animal to receive a prize as a milking cow. In agriculture, milk is a rather important element of produce, and butter sells at a good price. We know that it is an all-prevailing law in the animal kingdom, that like produces like; and I believe that the offspring of that cow would be diseased—not to the same extent, but in the same way that she herself is. For that reason we did not award her a prize.' I have mentioned these reasons to you, and let all who are dissatisfied go home and ruminate upon them. I would appeal to any practical man of unbiassed mind, whether they are not reasons that ought to weigh with those who have the duties of judges in a show-yard."

This is rather a long extract; but it is a good, straight-forward, practical speech, full of truths and facts that have been too often shirked, and we should be sorry that our readers should miss it. Captain Davy, however, might have been a little irate at the compliments he received as to "knowing nothing about it," and "going off home." But he was followed by Mr. Phillips, of Totnes, who spoke for the judges of Shorthorns, and who spoke for the Shorthorns much after the fashion Captain Davy did for the Devons:—"I am now going to advert to a subject which has already been introduced. It is a growing evil, and one that ought to be put a stop to, the exhibiting on these occasions stock that have been artificially brought to an unnatural size, only for the purpose of getting prizes. It is an injury both to the public and the breeder; because such animals seldom breed; and if they do, they rarely produce good stock. I believe the remedy is in the hands of the committees who appoint the judges. You know full well that on many occasions there is placed in the hands of judges a rule that they should not award prizes to stock in an unfit state for breeding. The question is, do they adhere to that? I say not. Invariably this question is entirely overlooked, because those who have the management of these societies consider that if they were to carry out this rule they would injure the show, as such and such fat stock from certain breeders would not be exhibited. But I contend it would not be so. Carry out that rule, and you would find that these societies would have much more beneficial effect than they have now. You would find those gentlemen who declined to exhibit would soon return, and would exhibit their cattle in a natural state. Further than that, there are many who now refuse to exhibit very good stock, because they know that on these occasions the prizes are awarded, not to the most skilful breeders, but, very often, to the most extravagant feeders."

Our readers know how long this has been our own argument, and how thoroughly it is justified. It is this over-feeding that brings prize stock into such disrepute—that lands them in America and the colonies dear bargains and barren butcher's beasts. It is this that tends to all the humbug and secrets in the management of a herd, where one set of animals are kept for use, and another for show. It is this that deters so many good men from ever exhibiting at all. The remedy, however, rests clearly with the judges. No matter how ready the Stewards or the Council may be to pass over the abuse, let them only act up to, and speak out, like Captain Davy and Mr. Phillips, and they may soon do a deal of good. Never mind what interested people may say who have dairy cows too fat to give milk, or bulls too pampered to get stock. If they are fit to be judges at all, they can estimate fairly-fed animals quite as correctly as they can the over-fed. And a man who prizes a beast at a breeding show chiefly because it is made up for a Christmas one, is simply sanctioning an absurdity, a contradiction, and a delusion—if not a dishonesty.

SUMMERING HORSES.

SIR,—There are few subjects of greater importance to agriculturists, therefore deserving of elucidation, than judicious treatment of our best friend in the animal creation—the horse: at the same time the interest and convenience of the community are included, and very materially concerned. The difference between a young horse, purchased from a breeder who has reared him in conformity with the most approved usages, and one brought up, as is too frequently the case, doomed to emaciating, comparative starvation in the winter, and the enervating effects of an abundance of rank grass in the summer, is so well known to all who require the active services of the animal, as to render the former infinitely more valuable; thus both parties participate in the advantages—the breeder by the enhanced price, and the purchaser by the far great intrinsic value of the steed.

As an article appeared in your columns of the 20th of June, containing advice not precisely in conformity with modern practice, a few comments may serve to guide the uninitiated, for whose especial benefit such communications are intended. The writer quotes from Youatt, in commendation of spring grass, and has selected a work written some thirty years ago, since which time the march of improvement in the management of horses has made vast progress, as it has also in most other branches connected with agriculture; though, as concerns the equine family, at the instigation of that talented gentleman who imparted the results of his experience under the signature of “Nimrod,” and to whom all owners of horses owe a lasting debt of gratitude.

From the date when his articles were published, between the years 1822 and 1828, the “Nimrodian” system, as it is appropriately designated, has progressed to very general adoption. Much of the value of the horse depends upon his early treatment, especially as regards the nourishment he requires. I will, therefore, introduce from an edition of Youatt, published by Messrs. Routledge, in 1855, the re-editing and revising of which were entrusted to me, a few remarks concerning food and its effects:

“It is generally known that the embryo offspring partakes of the health or condition of the dam, therefore the food with which the mother is supplied must affect the foal. This is a subject too commonly disregarded by breeders, although it is constantly demonstrated after the foal comes into life. If a mare be supplied with food which produces relaxation, her foal will be in the same state; and constipation is recognized in a similar manner. The propriety of supplying a brood mare with the best and most suitable kinds of food during pregnancy cannot be too strongly impressed. In the management of young stock every effort should be made, by giving them food which is adapted to the purpose, to bring them to maturity as early as possible; by these means the texture and development

of the bones, the sinews, and the muscles is greatly accelerated. The constitution of each animal must be consulted, and it is highly important, if the acme of condition is to be attained by animals when they arrive at an age of maturity, that the growth and gradual development of their frames should be composed of those healthy and invigorating materials upon which the structure of condition can be raised. To accomplish this, hay, oats, and occasionally beans must form the principal items of equine dietary, and grass should be provided only in limited supplies during the summer months. It is to giving growing stock unrestricted quantities of green food that breeders must ascribe a very general cause for their disappointment, and it is by this practice that the kingdom is supplied with such vast numbers of worthless animals. Grass, it may be observed, loses two-thirds of its weight, and a greater portion of bulk, when converted into hay: but that extraneous matter consists of moisture, possessing no portion of fibrine; consequently it contains none of those elements which increase muscular development. If a horse be supported on grass alone, he must eat a vast quantity—equal to more than three times the proportion of hay—to derive an equivalent amount of nourishment. Being very full of sap and moisture, it is quickly digested; consequently the animal must be continually devouring it. This distends the stomach and bowels, and impairs the faculty of digestion; for the digestive powers require rest as well as the other organs of the body, if they are to be preserved in a healthy state. The muscular system is debilitated, and fat accumulates; flatulent colic, or gripes, is produced, which not unfrequently becomes constitutional. Nothing can be more erroneous than the antiquated impression that the purgative properties of young grass in the spring are conducive to the healthy state of the equine family. When the *modus operandi* of that description of food is explained, the supposition of its being calculated to produce beneficial effects must vanish. The young green herbage is extensively overcharged with sap and moisture, of a crude, acrimonious nature; and it exists so abundantly, that a considerable portion of it cannot be taken up by the organs destined for the secretion of urine, or by the absorbent vessels of the body. A great quantity of this superfluous fluid, therefore, passes into the intestines, and is thus discharged in a watery state. But the mischief does not terminate immediately on the subsiding of the purgative action: the absorbent vessels having been overloaded, become distended and relaxed, and some time intervenes before they resume their healthy tone, under the most judicious treatment. This is clearly exemplified by the habitual tendency which many horses exhibit of having swelled legs. Where this evil exists, any persons who entertain a doubt as to the primary cause, may readily convince themselves by investigating the course of treatment to which the animal

has been subjected. Horses which are reared on wet, marshy land, are invariably afflicted with this relaxed condition of the absorbent vessels of the legs. Constant supplies of green succulent food render these defects constitutional, and the most scientific stable management is often frustrated when such animals are required to perform ordinary labour. Their legs fail, not from anatomical defects, but from the cause explained, which operates injuriously upon a structure which is naturally perfect."

The actions of aperient medicines are different from the effects produced by spring grass. Those in common use act specifically upon the liver or the bowels, and their operations, when judiciously dispensed, are under control. There are persons who contend that the purgative action of spring grass is an order of Nature—an argument against which I am strenuously opposed. According to the wise provision of Nature, a horse does not change his pasturage. Thus as the young grass springs up he culls it, together with the withered remains of the last year's supply; under which circumstances no purgative effect is produced. It is quite different when the animal is consigned from the artificial diet of hay and corn to the succulent herbage of the spring, which occasions the condition just described.

I am quite prepared to endorse the caution of the correspondent of this journal, to use discrimination in the application of blisters to the legs of hunters, as cooling remedies are much more efficacious; but that blistering, *per se*, is the occasion of grease, is an argument to which I cannot subscribe. Grease is the offspring of a vitiated condition of the blood, which produces an undue secretion of the fluid circulating in the

legs, where it eventually accumulates, the absorbent vessels being inactive; but that vitiated condition of the blood proceeds from an overabundance of grass, the effects of which have been already described. It is a common complaint among cart-horses, in consequence of the quantities of grass or other green food with which they are supplied. In hunting-stables, where horses are properly summered, it is a disease unknown. As to bleeding horses when they become too fat, it is a practice quite obsolete, and never ought to be resorted to, except in cases of inflammation. Whenever a person advocates turning out a hunter for a summer's run, as the custom in olden times was designated, in order to restore the legs and feet by the agency of the damp coolness of the grass, and the gentle exercise the animal voluntarily takes, it inculcates the idea more of some pastoral poetical effusion than the result of experience, or even ordinary reflection. Pasture grounds during the dry weather of summer are hard and uneven, and the voluntary exercise a horse takes consists, when excited by any accidental cause, of a dangerous gallop; after which he very commonly cools himself in a pond or stream, where he contracts catarrhal affections, roaring, and half the "ills that horseflesh is heir to."

The most intelligent and able agriculturists have decided that the best system of keeping cattle is in yards or enclosures well sheltered with suitable buildings, where food is supplied to them throughout the year. If this practice be good with cattle, of which there is no doubt, it is of greater importance with horses, provided they have sufficient range for exercise, which is imperatively necessary.

I am, dear sir, yours truly,

CÆCIL.

MR. JONAS WEBB'S RAM-LETTING.

There is a tradition of an author whose fertile brain poured forth such a lengthy list of works, that the chief difficulty which he experienced was to write new prefaces. The story smacks somewhat of a paradox; but whether it is true or not, it suits our purpose just now. Mr. Jonas Webb offered his far-famed rams for "competitive examination,"—to use one of the phrases of the day—for the thirty-third time on Thursday; and when his pleasant meetings have been reported in these columns 33 times, it is difficult, so far as description is concerned, to invest them with any very special novelty. True the rams are continually changing, but they are more or less distinguished by the same points of excellence, and attract the same notice from a large number of the same people. Then there is the *locus in quo*: that at least is the same. Then there is Mr. Webb himself; and although he is unfortunately suffering just now from gouty feet, he was on Thursday the same hospitable host and successful exhibitor as ever. Then there is the same auctioneer, the same conditions of sale, the same arrangements and pens, and the same white-haired farm-servant leading round much the same rams in much the same fashion. The same trains disgorge at the same station about the same number of passengers, who make the same critical examination of the rams, indulge in the same orthodox pokes into their wool, and form the same good-humoured ring round the

same place. Finally, to make the parallel complete, very nearly the same readers will peruse these lines, and will expect much the same report.

This, however, is some consolation, as their views can be readily and fairly met: so to proceed with our narrative. The company began to arrive at Church Farm about 10 a.m.; but the attendance at first was small, and it was two in the afternoon before the usual muster was made. The morning was whiled away by the early comers with luncheon, followed by a stroll about the homestead, where some fine shorthorn bulls and cows (of some of which particulars appeared recently in the *Mark Lane Express*), were inspected. Some ewes and lambs were also visited, and elicited a good deal of approval. But in truth the weather was too hot for much active exertion, and not a few were fain to seek shelter from the fierce rays of the sun. It might be desirable to commence the actual business of the day a little earlier; but as Mr. Rigden, with truth observed, after dinner—although not exactly in the sense here meant—farmers are as a class slow to move, and at all agricultural gatherings a good deal of delay will probably always take place. Perhaps, after all, anything like precipitation would be regarded with disfavour, as it would check a preliminary examination of the rams penned. As usual, particulars were posted of each class, indicating the numbers

with which they were branded, the prices at which they were put up—that is to say, the terms on which any one desiring to hire any of them was at liberty to call them into the auctioneer's ring—and the weight of their last clip. The highest number branded was 175; but, as in former years private arrangements for letting and other circumstances reduced the actual number of rams penned to 124. Of these particulars of the nature just indicated are now appended:

FIVE YEARS OLD.			TWO YEARS OLD (continued).		
No.	Put up at	Weight of wool. lbs. oz.	No.	Put up at	Weight of wool. lbs. oz.
3	6 guineas..	10 0	86	12 guineas..	8 8
FOUR YEARS OLD.			87	25	7 8
4	15 guineas..	10 4	89	30	7 8
5	8	7 8	90	12	10 8
6	15	7 8	91	14	9 4
9	5	7 4	92	11	10 8
11	9	8 0	94	15	7 8
12	50	7 12	95	11	9 4
14	37	10 0	96	40	7 0
15	18	8 0	97	40	8 8
THREE YEARS OLD.			98	20	8 8
17	11 guineas..	9 4	103	45	11 0
18	9	6 0	104	20	7 8
20	5	8 12	106	30	8 4
21	5	8 8	107	30	9 0
22	6	9 0	YEARLINGS.		
23	5	8 0	110	13 guineas..	7 4
24	18	10 4	111	7	7 4
25	9	10 8	113	8	6 12
26	20	9 0	114	7	6 8
27	7	7 12	116	9	7 8
28	7	8 0	118	9	7 12
31	15	8 4	119	15	8 0
32	15	7 4	120	6	7 8
33	11	9 12	121	6	7 0
35	20	8 12	123	18	8 0
37	40	8 12	124	13	9 0
38	25	9 0	126	17	8 8
39	30	6 12	128	11	8 0
40	40	8 12	130	20	8 0
41	30	8 8	131	13	7 0
42	16	8 4	132	9	7 4
43	13	9 4	134	17	8 4
44	30	9 0	135	7	8 8
45	20	9 12	136	10	8 4
47	35	8 0	137	9	8 0
TWO YEARS OLD.			138	11	10 8
48	14 guineas..	8 12	139	7	7 8
49	6	8 4	140	15	8 8
50	10	9 0	141	10	6 0
53	11	8 4	143	9	6 0
54	11	6 8	146	15	8 0
55	10	8 0	147	24	7 12
56	10	7 0	148	30	7 0
57	11	7 12	149	18	7 0
58	11	7 12	150	27	8 8
59	13	8 12	151	30	8 12
61	10	7 8	152	35	7 8
63	8	9 0	154	35	8 12
64	18	8 4	156	35	9 4
65	6	7 0	157	30	7 12
67	18	9 8	158	22	7 12
68	7	6 8	159	50	7 8
69	10	7 12	160	25	8 0
73	9	8 0	161	18	8 0
74	11	9 0	162	25	8 12
75	18	8 0	163	15	10 0
76	35	7 12	164	23	7 12
80	14	9 8	168	40	8 0
81	12	9 0	169	40	8 12
82	12	9 0	170	35	7 8
83	9	9 4	171	40	8 4
84	13	9 0	174	35	7 4
85	14	8 0	175	55	7 8

At half-past two the auctioneer, Mr. J. Carter Jonas, made his appearance, with Mr. Webb, who was drawn on the ground

in a chaise. Many friends pressed round to make inquiries as to his health; and the reply given, in cheery tones, was, "All right except my feet." Mr. Jonas, in commencing the business, read the conditions of sale, which reserved to Mr. Webb the right of varying the prices set upon the rams after the day of letting. Mr. Jonas also observed that it must be a matter of congratulation to the company to see so fine a show; as the rams on offer not only supported the fame of the Babraham flock, but also tended in the direction of that further progress which, under present circumstances, must also be aimed at by the agriculturists of England, through the utmost possible development of their flocks and crops. In conclusion, Mr. Jonas invited an immediate prosecution of the business of the day, and expressed his confidence that the biddings would far exceed the low reserve prices which had been fixed upon the sheep.

The competition was tolerably brisk at first, and, as usual, languished towards the close. The first ram called in was No. 12, which was put up at 50 gs. The biddings lay principally between Mr. Rigden and Mr. Waters, of Eastbourne, and they went on in a rapid *crescendo* movement till 70 gs. were reached. This proved the maximum, and Mr. Rigden desisting from the contest at this point, Mr. Waters was declared the purchaser, at, as afterwards appeared, the highest bidding realized during the day. For No. 103 there was also a sharp competition. The biddings commenced at 45 gs., and went on to 54 gs., when Mr. Rigden—to save, as he said, nodding heads—advanced at one stride to 60 gs. A further bid was made, but Mr. Rigden carried off the ram at 62 gs. The next case in which there was a struggle was for No. 154, which came into the ring at 35 gs., and advanced step by step to 50 gs., at which price it was hired by Mr. Clarke for the Duke of Richmond. Another Sussex man, Mr. Hensman, from the neighbourhood of Arundel, took off No. 175 at 58 gs., so that it will be seen that Sussex was, as usual, well represented. For No. 147, whose sire obtained the first prize at Salisbury, there were some spirited biddings, commencing with 24 gs., and ending with 38 gs., at which price the animal was secured for Lord Dacre. Mr. T. Ellman, another Sussex breeder, took one of the lots; and among the other hirers were stated to be agents of Lord Sondes, the Earl of Leicester, the Duke of Beaufort, the Earl of Yarborough, Mr. Bramston, M.P., and Mr. Adeane, M.P. Biddings were also successfully made by Mr. Eve, of Silsoe, Bedfordshire; Mr. T. Crisp, Hatley Abbey, Suffolk; Mr. B. Webb; Mr. Winton, Kent; Mr. Revans; Mr. J. Smith; and other gentlemen, whose names did not transpire. Two rams were hired, and subsequently bought outright by Mr. Crisp for Baron Nathusius, a Prussian Noble. The following table exhibits the result of the letting, which closed at 4 o'clock, and also shows the order in which the rams let were called into the ring

No.	Put up at.	Let at.	No.	Put up at.	Let at.
12	50 gs.	70 gs.	32	15 gs.	20 gs.
174	35	35	123	9	9
103	45	62	146	15	15
85	14	14	35	20	20
159	50	51	156	35	37
17	11	13	134	17	20
130	20	20	104	20	20
154	35	56	18	9	9
14	37	41	138	11	11
53	11	14	24	18	22
106*	30	42	4	15	17
40	40	40	86	12	15
45	20	21	113	8	8
140	15	16	22	6	8
91	14	18	21	5	7
175	55	58	161	18	18
160	25	30	114	7	7
136	10	10	143	30	33
31	15	20	151	30	33
92	11	11	76	35	39
41	30	30	75	18	18
26	20	27	158	22	22
162	25	25	89	30	30
147	24	38	84	13	13
74	11	11	93	20	20
33	11	20	164	23	23
126	17	17	28	7	7

* The sire of this ram was let a few years since for 197 gs.

This gives a total receipt of £1,376 11s., or an average of £25 9s. 10d. per head on the 54 rams let; and the comparative result of the day's proceedings will be seen from the following table:

Year.	No. Publicly Let.	Average price.
1852.....	69	£22 3 1
1853.....	71	22 6 3
1854.....	75	25 4 3
1855.....	77	25 15 2
1856.....	77	33 1 4
1857.....	65	27 17 7
1858.....	61	20 19 3
1859.....	54	25 9 10

The letting concluded, Mr. Webb gave the word for dinner, which was served in an adjoining marquee. In the unavoidable absence of the Earl of Hardwick, and also of his brother, the Hon. Eliot Yorke, M.P., who has acted as a kind of chairman in ordinary for some years past, Major Pemberton, late High Sheriff of Cambridgeshire, presided; and the hon. and gallant gentleman was supported by Mr. H. J. Adeane, M.P., Lord G. Osborne, Mr. C. Alderson (son of the late Mr. Baron Alderson), Mr. A. Pyne, Captain Goodwin, Captain Walton, Captain Davis, R.N., Mr. W. F. M. Copeland, Mr. R. Houlton, Captain Walton, the Rev. J. Graham, the Rev. Mr. Singleton, Mr. Luther H. Tucker (junior editor of the *United States Country Gentleman and Cultivator*), Mr. A. Dight, of Liverpool Plains, New South Wales (who is about to take out to that country some of Mr. Webb's short-horn stock and rams, at an expenditure of from £400 to £500), Mr. G. D. Badham, Mr. S. Jonas, the gentlemen whose names have already been mentioned as hirers of rams, and nearly 200 other visitors.

The usual loyal and complimentary toasts were duly given, with copious allusions to the necessity of keeping up an effective navy, one speaker (Mr. Alderson) remarking, amid loud laughter and cheers, that if the French attempted an invasion of England, they would, like Mr. Webb's rams, be "jolly well sold."

The toast of the "Bishop and Clergy of the Diocese" called up the Rev. Mr. Singleton, who referred at great length to the question of church rates, and imputed failure to the voluntary principle. As there was evidently a dissenting element in the assembly, and the meeting had not been convened to discuss ecclesiastical politics, the rev. gentleman's observations were considered in bad taste. An amusing scene accordingly followed. The orator's well-turned periods at last elicited ominous scrapings of feet, and finally undisguised conversation. The speaker kept on; but as he eventually became completely inaudible, he was fain at last to desist, and his resumption of his seat was received with a loud ironical cheer.

The CHAIRMAN next gave, in complimentary terms, the "Health of the Landlord of the Soil, Mr. Adeane."

Mr. ADEANE, in reply, expressed a hope that nothing would ever occur in the course of his political and social life which would ever deprive him of the confidence of his friends and neighbours. He had been entrusted with the task of proposing what might be called the toast of the evening, the health of the worthy host, Mr. Webb; whom he was glad to see before him, as large as life. Mr. Webb had attained the highest position in the sphere in which he had walked. He (Mr. Adeane) was most proud of having the honour of being his landlord; and he intended always to keep his career before him, as from youth to age he had followed the path of honesty, integrity, and good fellowship with all men. Mr. Webb, he was sorry to say, had not attained that high figure for any of his sheep which he had reached on former occasions, when one of his illustrious friends was more engaged in domestic duties

than at present; but the company would be glad to hear that the average price per head was about 4l. 10s. in advance of last year. He congratulated Mr. Webb on his success, and he was delighted to hear that he was going to exhibit next week at Warwick. If a man hid his light under a bushel, he did not do so well; and in looking through the papers he (Mr. Adeane) had observed with regret that Mr. Webb's name did not appear so prominently as formerly. He was glad, however, to find that Mr. Webb was about to return to the Royal Society's exhibitions, and he was sure that the same success would attend him. He proposed the health of Mr. Jonas Webb, the best tenant landlord ever had, and also one of the best of husbands and fathers.

Mr. WEBB stated that he had only that morning been released from his bed-room, and of course he had experienced much disappointment in not being able to receive his friends as on previous occasions. His landlord had been kind enough to make some remarks respecting him; but if such kind expressions could be applied to him, he did not know so good a plan to make a good tenant as to have a succession of good landlords. The result of the last year's letting was not quite so satisfactory as the present; but this year the result had been an advance of 4l. on 1858. This was most satisfactory; and he was much indebted to those who had attended, not only now, but in previous years, and taken sheep from him. One great inducement which had led him again to exhibit was that in going to Chester he found that all the breeders of South-down sheep exhibited only 23 Southdown shearing rams. The quality was very good, but the number was too small to satisfy the public; and, acting on the advice of his friends, he intended to become an exhibitor again this year of a lot of animals which would, he believed, show great weight, independent of mutton and character. He read in a newspaper, the other day, the expediency of adhering to—

"The good old rule, the simple plan,
That those should keep who have the power,
And those should get who can."

At all events he should endeavour to do so. In conclusion, Mr. Webb proposed the health of the Chairman, to whom, he observed, he was much indebted for consenting to preside, at almost a moment's notice, and for the able manner in which he had performed his duties.

The CHAIRMAN responded.

The Rev. J. GRAHAM proposed the next toast, "Prosperity to the Royal Agricultural Society of England," and observed that the sentiment spoke for itself, as there could be no doubt that the farmers of Great Britain were greatly indebted to the society. The agricultural interest had gone through the mighty ordeal of free trade: he remembered the time when he was much alarmed on the subject, and he confessed that he was not altogether free from alarm now. At the critical period to which he referred he wrote to his late lamented friend Mr. Goulburn, and pointed out what appeared to be the great difficulties of contending with Europe in regard to the produce of the land. Mr. Goulburn replied that he thought all his (Mr. Graham's) prophecies were mere chimeras; that there was no chance of any evil happening to this country from free trade, more especially from free trade in cattle; and that only a limited quantity of cattle could be brought into this country from abroad. When legislators acted upon principles so wide of the mark as they did in these days, could any one be surprised at the depression which had taken place, and which would have continued to this day but for the Crimean war? Could it be a matter of astonishment that agriculturists should feel themselves a little aggrieved at persons legislating upon principles which had proved so utterly untrue? He was the

other day with a friend in Norfolk, who had a relative on the Elbe, and he learnt that the King of Prussia (who knew what he was about, and who was most warmly interested in the agriculture of that country) had selected a gentleman who could carry over to Prussia English breeds of sheep and cattle, and thereby form the nucleus of a grand agricultural system in Prussia. The gentleman who was selected was a great bull breeder of his day, Mr. Bates; and he took over Leicesters, some of Mr. Webb's, and other descriptions of sheep and cattle. He was granted a large extent of land on the borders of the Elbe, of which he had a lease of 37 years, and great and various advantages were held out to him by the King of Prussia. In the first instance he laboured under great difficulties; the peasantry looked with discontent upon the stock he had introduced, and positively until he sent for a herdman from Durham he never could raise an English calf in Prussia. He had now, however, established himself, and had put a little of Mr. Webb's blood into the stock; but he had never dared to send an animal for the London market until about a month or six weeks since, when he forwarded 125 sheep. In the accounts which he had sent home he stated that he was perfectly satisfied with the result of his experiment, and that he found from the best possible calculations, that it cost only 1d. per lb. to send the sheep to London. If, therefore, the King of Prussia had begun in this way, and if immense numbers of animals could be sent at so cheap a rate—by rail to Hamburg, and from Hamburg to London by ship—the farmers of England stood in need of every possible improvement in agriculture (Hear, hear, and some interruption from a rather disorderly section at the lower end of the tent). In giving the toast Mr. Graham observed, in conclusion, that he was requested to couple with it the name of a gentleman who had done much for the agriculture of the country; he referred to Mr. Rigden, of Sussex.

Mr. RIGDEN, in reply, said he thought all present would agree with him that farmers had no right to complain of their present position. It was true that wheat was not paying so good a price, but he thought this was in some degree owing to the large crop, and it was proverbial that farmers never grumbled (loud laughter). Perhaps, now that he was on his legs, he might be allowed to refer to the position which Mr. Jonas Webb held as a breeder of sheep. Mr. Adeane had expressed his regret that Mr. Webb had set his candle under a bushel; and whenever Mr. Webb hid his candle, he (Mr. Rigden) would show his light. Whenever Mr. Webb was not an exhibitor, he (Mr. Rigden) was a successful candidate, and consequently he had a great interest in keeping him out of the field (laughter); but if Mr. Webb exhibited this year the best sheep, which he believed he would, he hoped he would win. It had been said that farmers were slow to move, but it would be difficult to produce such a pen of sheep as Mr. Webb had shown during the day. If the richest man in the world—if the Rothschilds were to buy up Mr. Webb's stock, they would not be able that time twelvemonth to show what had been witnessed during the day. The management of the Babraham flock was the work of a master-mind; Mr. Webb had no equal in England, and he did not believe he was likely to have one in his day and generation.

Mr. WEBB gave, "The healths of our friends across the Atlantic," coupling with the toast the name of Mr. L. H. Tucker, on the staff of one of the agricultural journals of the United States. Mr. Webb added that he had received an order to send a ram to the United States at 150 guineas.

Mr. TUCKER said, in two respects Old England—for they

were still fond of calling her Old England across the water—was so famous, viz., for her hospitality and for her agriculture; that while he was sure that neither could excel the other, he was equally sure that it would be difficult to find elsewhere an example of both similar to that which had been witnessed during the day. And when he saw so many gentlemen connected with the pursuit of agriculture, not as a recreation or as a means of spending money, but with something of that energy which had placed British commerce and British manufactures in their present proud pre-eminence, he could not but appreciate the solid basis on which English institutions stood, and the services which had been performed for agriculture by such gentlemen as Mr. Webb. American traders and merchants, when they wished to secure the best, had recourse to the achievements of British genius and the excellence of British products; and American farmers acted on the same principle. The prodigies which had been performed in the improvement of the sheep and swine, and the creation of such a breed as shorthorns in cattle, were no less triumphs of genius; and for whatever excellence Americans could boast in their show yards, for that kind of animals capable of producing the most beef, mutton, and pork at the least expense of time and food, he most willingly and cordially acknowledged their indebtedness to English breeders, among whom he was most happy to find himself that day, and many of whose names were known all the way from France to Australia, as well as on the banks of the Hudson river where he lived, and the still more distant and almost boundless prairies of the Western States. He might conclude by expressing the pleasure with which he had observed that Mr. Cobden—who had just returned from a journey in America, and whom he had the pleasure of meeting there last spring—in his first speech after landing at Liverpool gave the fullest assurances derived from his own personal observation and knowledge, that the people of America still looked back to England—although perhaps as a grown-up and somewhat wayward boy might look back to the home of his fathers—with the deepest sympathy in all the progress she could make, with the utmost confidence in the good will of her inhabitants, and with the proudest anticipations for her future no less than for their own.

Mr. MARKBY, jun., of Duxford, proposed the healths of Mrs. Webb and family (Applause).

Mr. WEBB responded, and proposed the health Mr. John Waters, the hirer of the highest priced tup.

Mr. WATERS, in responding, said the county of Sussex was indebted to Mr. Webb for bringing Southdown sheep first away from their home, and then carrying them to such perfection, that Sussex men found it desirable to hire them and take them back. Although there might not be much credit due to him for hiring the highest priced ram—perhaps there might be many better sheep at a lower price—he was glad to find that Sussex men had obtained six of the best lots to go back to that county.

The CHAIRMAN gave the last toast on the list, "Our next merry meeting," and the meeting shortly afterwards broke up, some of the company betaking themselves to tea and coffee, others to cigars and meerschaums, and some at once seeking their homes.

THE ENGLISH RACE HORSE.—In Great Britain, from the highly cultivated knowledge of the mechanical structure of living bodies, with the junction of best shapes—although, but for racing, this knowledge would have been comparatively in its infancy—the horse has arrived at the

highest state of perfection of which his nature is capable; and in whatever country, and in whatever climate, his racing powers are put to the test, he has scarcely found a rival, excepting under very disadvantageous circumstances. It is true his *lasting* qualities were doubted, and he was challenged to rebut the charge, and the following was the result:—On the 4th of August, 1825, two second-rate English racers, Sharper and Mina, contended against the most celebrated Cossack horses from the Don, the Black Sea, and the Ural, in a race of the cruel length of 47 miles. At starting, Sharper and Mina ran away with their riders more than a mile, and up a steep hill, when the latter horse broke down, and pulled up. Half the distance was run in

an hour and forty minutes. In the last half, only one of the Cossack horses was able to contend with Sharper, who, notwithstanding that every foul advantage was taken by changing the weight, and dragging along his opponent by a rope, won his race in gallant style, performing the distance in two hours and forty-eight minutes. At starting, the English horses carried three stone more weight than the Cossacks; and, during the latter half of the race, the one Cossack who remained in it was ridden by a mere child. Every trial over the desert, no matter what the distance, during 1826-55, between English and eastern horses, has been attended with precisely the same results:—*From the Encyclopedia Britannica (New Edition).*

THE FUTURE COURSE OF THE TRADE OF THE NORTH AMERICAN WATERCOURSE.

No. VI.

Such are the proposals for improving the water communications between Chicago and the east. The Americans support the building of a canal from the Georgian Bay to a Canadian port, convenient for the continued prosecution of the Buffalo and Oswego trade; and discourage the building of a canal between Lake Nipissing and the Ottawa river, as then Buffalo and Oswego interests would probably be destroyed. Toronto, Peterborough, and some other workhouse cities, on the shore of Lake Ontario, support the interested American scheme, that local purposes may be served. Every swindler in the sale of public or private lands is aware that the canal would increase the market value of his miserable wooden lots and farms a thousand-fold, and he backs the project, although feeling that in so doing he sells his country's rights for a mess of pottage.

But for years to come, the best concocted water transport scheme, whether pure American or pure Canadian, or a combination of the two, is not likely to be received with favour on the English Stock Exchange, and as a consequence will be received with coldness in New York. Even the bait of grants of lands is old and worn out, and will no longer influence a single sale of stock; but every project will be judged upon its merits only, and what in future will recommend a new railroad or canal to facilitate transportation from west to east, when the tendency of the course of western trade lies another way.

Before leaving this part of the subject, it may be well to advert to direct western trans-atlantic trade more in detail than has yet been done.

The Dean Richmond, from Chicago to Liverpool, made the voyage on the joint account of several leading Chicago merchants, and the nominal freight was equal to 15d. a bushel for wheat. When the cargo was landed at Liverpool, the quantity damaged on the voyage was considerable, but, notwithstanding, the net profit, at the nominal freight named, was £400. The vessel was then sold at a price which it was more profitable to take than to perform the outward Chicago voyage, but it was considerably under the lake valuation. Seeing that the parties, who were the chief sharers in the venture, have not repeated the operation, nor interested themselves further in the trade, although perfectly able to do so, both in point of influence and means, the Dean Richmond's voyage may be regarded in the light of a commercial failure. This may appear incredible in England, as it was understood that a high price was paid for the vessel; but when it is considered that carpenters' wages, high as they are in England, are still higher in

the interior of America—expressed in money they are always twice and sometimes even thrice the English rate—the case shows itself in its proper light. Not only is the mere labour of building higher, but every article of outfit, in Chicago, is at least four times the regular English market price. It would therefore be within the mark to say that the lake value of the Dean Richmond was twice the amount realized on the sale.

The season following that of the voyage of the Dean Richmond gave early promise of the establishment of direct trade on a firm basis. Other parties entered the field, and a ship belonging to Hamilton, Canada West, was chartered for a round voyage, to Queenstown, for orders, and back to Chicago. Other vessels were also wanted, to be taken up for the trade, and before the opening of the navigation, orders were on hand for over fifteen general cargoes of wheat, flour, and corn, and beef, bacon, tallow, lard, and hides. Some of these orders were from Glasgow, some from Hull, and some from London, and all in the usual way. Unfortunately, when the navigation opened, an unexpected speculative advance took place in the Chicago market, and the English limits were exceeded in every case. To keep faith with all parties, a cargo of hides was purchased at a cost price of £25,000; and delay taking place in the selling of so much exchange, the shippers of the hides began to unload the vessel, and in a moment the Chicago trans-atlantic trade fell to the ground.

It is worthy of remark that every obstacle was thrown in the way of the Hamilton vessel being sent to sea. Every one was abstractly interested in her being sent away; but practically, every one was determined to make as much money of her as he could. When the vessel came to Chicago, no loading-berth could be had at the usual price; and one party asked the modest sum of five hundred dollars, or one hundred pounds, for the privilege of one week's loading up; and ultimately, forty pounds was agreed to be paid. In the other arrangements, of a minor kind, the same obstructive selfishness was encountered at every step; and as we shall see presently, those interested in the subsequent vessel, the *Madreia Pet*, were treated in the same way.

The experience of the Hamilton vessel, however, brought out the real difficulties, in the way of operating interior trade; and now that these are fully known, provision can be made in future: but the consideration of them comes within the subject of the following article.

The venture of the *Medeira Pet* was undertaken by parties in New Brunswick, and controlled by a New York firm

The vessel reached Chicago after a somewhat tedious voyage of eighty days; and the members of the Board of Trade cheered lustily from the pier as she was being moored. The cargo was ill assorted for the market, consisting of rough iron, rougher hardware, and the roughest crockery, instead of London porter, Scotch ales, and Scotch and Irish whisky. Still, it was a cargo of staple articles, and would have made no sensible addition to existing wholesale stocks; but after every effort on the part of the city trade to cheapen everything below even English producing cost, the bulk of the little schooner's cargo has been suffered to remain unsold nearly two years after the time of import. Chicago and the West are therefore evidently not yet in a state to appreciate the benefits of direct transatlantic trade.

Bad luck unfortunately attended the *Madeira Pet* also on the homeward voyage, with a cargo of hides and staves. The parties to whom she was consigned became insolvent, and, so far, the loss on the round voyage exceeds £3,000; and unless the Chicago people pay a fair price for the remaining outward cargo, the loss will be all but doubled.

Since these unavailing efforts, the Quebec and Liverpool ocean steamers have offered to carry Chicago produce on easy terms; and the opinion has gained ground every day, that, if direct trade between the West and Europe is to be carried on by the St. Lawrence river, it must, in view of the tedious voyage up and down the lakes by sailing vessels, be done in the first instance by propellers on the lakes, with transhipment at Montreal.

The following is the combined freight tariff of the Grand Trunk Railroad and the ocean steamers, season 1858:—

THROUGH FREIGHTS FROM CHICAGO TO LIVERPOOL.

1. Flour per barrel, by propeller to Collingwood, thence per rail to Montreal, and ocean steamer to Liverpool, time, twenty to twenty-five days	s. d. 6 8
2. Flour per barrel, by rail to Montreal, thence per ocean steamer to Liverpool, time, fifteen to twenty days	7 6
3. Grain, in bags, per 60lbs., by propeller to Collingwood, thence per rail to Montreal, and ocean steamer to Liverpool, time, twenty to twenty-five days	1 10½
4. Grain, in bags, per 60lbs., by rail to Montreal, thence per ocean steamer to Liverpool, time, fifteen to twenty days	2 8½

The following were the average rates of wheat freight per bushel from Chicago to Buffalo and Oswego, season 1857:—

TO BUFFALO.	TO OSWEGO.
Average, 2½d. per 60lbs.....	4d. per 60lbs.
Range from 6½d. to 1½d. per 60lbs.....	6½d. to 3d. per 60lbs.

The rate to Montreal is usually 2½d. per bushel in excess of the Oswego freight.

The following was the average rate of wheat freight per bushel from Buffalo to New York, season 1857:—

TO NEW YORK.

Average 6½d. per 60lbs. Range from 7½d. to 5½d. per 60lbs. The following was the general railroad tariff from Chicago to New York, season 1858:—

1. Grain, in bags, per 60lbs., time, ten to twenty days	s. d. 2 0
2. Hides, &c., per 100lbs, time, ten to twenty days	2 11
3. Flour per barrel, time, ten to twenty days	6 5½

Sometimes the railroad rates are much higher; and the railroads carrying to New York from Chicago are the Pittsburgh and Fort Wayne, the Michigan Central, and the Michigan Southern.

With these figures drawn from official sources, it is not necessary to say a single word further as to the chances of eastern railroads coming seriously into competition with steam or sailing vessels, in grain transportation to the seaboard. The following is the closest approximation to average rates, season 1858:—

BY WATER.	BY RAIL.
To Montreal:—	
Wheat, per 60lbs., 8d.....	1s. 3d.
Flour, per barrel, 2s. 0d.....	3s. 4d.
To New York:—	
Wheat, per 60lbs., 9d.....	2s. 0d.
Flour, per barrel, 1s. 10d.....	6s. 5d.

From Chicago to Montreal wheat transportation, by railroad, is on an average ninety-four per cent. higher than by water, and flour eighty-four per cent. From Chicago to New York wheat transportation, by railroad, is on an average one hundred and fifty per cent. higher than by water, and flour one hundred and seventy-five per cent. The only difference in the cost of transportation between Chicago and New York, and between Chicago and Montreal, is in flour, which is carried to New York at a rate equal to eight per cent. less; but according to Mr. Young's showing, the ocean freight from Montreal is one hundred per cent. higher than from New York. That one hundred per cent. may be said, therefore, to form the disadvantage of the St. Lawrence route; and it must be plain that, with much less disadvantage than that represented by one hundred per cent. more ocean freight, as it does at present, trade, in future, will give a decided preference to the Erie canal, either by the Buffalo or Oswego branch.

Thus much for the St. Lawrence water-course, and the prospects of western trade taking the route of the Erie Canal, or of Montreal and the Caughnawaga. At the moment trade naturally takes the former, and avoids the latter; and while Canadians, year after year, are discussing projects, the Americans steadily carry forward the enlargement of the Erie Canal, and improve the means of transport. A little more persistence in these different courses, and the Canadians will at least be ten years behind their neighbours; and the St. Lawrence Canals, which cost so much, will cease practically to possess utility and a market value. Should Canada, then, by some superhuman effort, open the Ottawa Channel from the Georgian Bay, and the Caughnawaga, from Montreal, it is within the limits of possibility that improvements in steam navigation, on the Erie Canal, will still secure to the Americans an equal measure of advantage to that now enjoyed; and, if steam fails to do so, the interest of the canal debt will assuredly be paid by a tax on the people of New York; and Erie Canal tolls cease for ever. To this alternative the public men of New York State are prepared to go; and it is not too much to say, that the financial state of Canada would not warrant such a course, in reference to public works; and such being the case, Canada would still continue to wage an unequal contest. The Erie Canal, in a commercial point of view, has done more towards the growth of New York city, than any other undertaking that can be named; and will not, therefore, be given up without a struggle; and a struggle between New York and Canada would end inevitably in the discomfiture of the latter.

But it is quite possible, as has been shown already, to divert the bulk of western trade into another channel than that of either the Erie Canal, or the Montreal and Caughnawaga; and against that competition the whole power of New York State and City would not prevail. That competing channel would be open at the close of harvest, when an inclement season binds, with an iron grasp, the waters of New York and

Canada; and the produce upon which the Erie Canal depends would be moved, in anticipation, to the markets of New York and Europe. Against such a competition, not even the enlargement of the Erie Canal, nor the abrogation of its tolls, nor the wealth of New York City, would succeed; and that competition, New York and Canada, in the nature of things, have to face at an early day.

Recurring to the previous figures of distance between Chicago and New York and Montreal by water, and averaging the statements of the different authorities, we have the following on the one hand, as the navigable distance from Chicago to New York and Montreal; and on the other hand, the navigable distance from St. Louis and Cairo to New Orleans.

I. Chicago to New York, 1487 miles. (Erie Canal distance 353 miles.)	III. St. Louis to New Orleans, 1212 miles. (No canal.)
II. Chicago to Montreal, 1384 miles. (Canal distance 75 miles.)	IV. Cairo to New Orleans, 1040 miles. (No canal.)

The railroad distance from Chicago to New York and Montreal may also be stated, to make the comparison complete:

I. From Chicago to New York, by the Michigan Central, the Great Western of Canada, the New York Central, and the Hudson River Railroads	Miles. 950
II. From Chicago to New York, by the Michigan Southern, the Buffalo, Cleveland, and Toledo, the New York Central, and the Hudson River Railroads	963
III. From Chicago to New York, by the Michigan Central, the Great Western of Canada, and the New York and Erie Railroads	960
IV. From Chicago to New York, by the Michigan Southern, the Buffalo, Cleveland, and Toledo, and the New York and Erie Railroads	960
V. From Chicago to New York, by the Pittsburgh and Fortwayne, the Pennsylvania Central, and the Camden and Amboy Railroads	920

Average... 951

As near as can be, the cost of steam transportation on the lakes, on an average of years, is £2 8s. 4d. per ton from Chicago to New York, if the whole distance were open water navigation, without canals, the average distance being 1487 miles.

As near as can be, the cost of canal navigation on the Erie canal on an average of years is £4 19s. 2d. per ton from Chicago to New York, if the navigation were all canal, the average distance being 1,487 miles. And the average cost of transportation on the New York Central Railroad, for the past three years, has been 1½d. per ton per mile; say £4 19s. 1d. per ton from Chicago to New York, the average distance being 951 miles.

	Per ton.
1. All open water steam navigation...	£2 3 4
2. All canal navigation	4 19 2
3. All railroad transit	4 19 1

But the distance between Chicago and New York is part canal and part steamboat navigation; so that the actual computation, leaving out the difference of transportation on the Hudson, would be—

	£	s.	d.
353 miles canal at 4-5ths of a penny..	1	3	6½
1,147 miles lake &c. at 7-20ths of a penny	1	13	5½

Actual average cost per ton by water £2 17 0

The comparison then is the following:

Average cost of transportation by railroad from Chicago to New York, per ton	4 19 1
Average cost of water transportation by canal and lakes, &c., from Chicago to New York, per ton	2 17 0

Difference against railroad, per ton, ... £2 2 1

Adopting these official calculations, which are the actual average charge, and therefore admitting of no dispute, we have the following as the comparison between the transportation from St. Louis to New Orleans on the one hand, and between Chicago and New York on the other:

	£	s.	d.
St. Louis to New Orleans, 1,212 miles -			
at 7-20ths of a penny	1	15	4
Chicago to New York	2	17	0

Difference against the Erie Canal route £1 1 8

This difference of £1 1s. 8d. against the Erie Canal route to the seaboard, and in favour of the Mississippi route to the seaboard, leaves a flour freight from New Orleans to Liverpool of 2s. 2d. per barrel; and thereby establishes the statement previously made, that produce sent by the Mississippi route could be landed in Liverpool or London on precisely the same transportation charges as are incurred in the present movement of produce from Chicago to New York.

But it may be alleged that the cost of transportation to St. Louis should be included in the calculation; but when that allegation is made, it is obviously forgotten that every bushel of grain received at the Chicago elevators has borne a less or greater transportation charge, and so long as that transportation charge is not included in the calculation from Chicago to New York, it would be unequal to include the corresponding charge in the calculation from St. Louis to New Orleans. And further, it has been shown that Chicago grain is not grown on the shores of Lake Michigan, but on the Mississippi river bottoms; and therefore, the bulk of that grain is carried by railroads across the whole territory of Illinois; while if the movement were made down the river to St. Louis, all the advantages of water communication would be secured.

But not only is grain transported from the extremity of Illinois to Chicago, but a large proportion of the crop of Iowa finds its way also; and the magnitude of the preliminary railroad charge, antecedent to the warehousing in the Chicago elevators, will be realized when it is stated that the cost from Iowa City to Chicago, a distance of 242 miles, is 10d. per bushel of sixty pounds; while the summer freight, per bushel, from St. Louis to New Orleans is sometimes as low as 3½d., and 10d. per barrel of flour. Such being the case, not only may western produce be removed cheaper to Liverpool by the Mississippi to New Orleans, than to New York by the Erie Canal, but sometimes, at least, the charges paid for the movement of produce from parts of Iowa to Chicago would suffice to defray every charge from the same parts of Iowa to Liverpool.

The general Illinois railroad tariff for wheat transportation is 4½d. per bushel per 100 miles; and the general transportation charge on the Illinois and Michigan Canal is 3½d. per bushel per 100 miles; while the general transportation charge on the Illinois River is only 7-10ths of a halfpenny per bushel per hundred miles.

Illinois wheat transportation charge per bushel of 60lbs.:

By Railroad, per 100 miles	4½d.
By Canal, "	3½d.
By Steamer, "	7-10ths of a penny.

It is impossible to look at these figures without being assured of the futility of attempting in the future to continue the course of western trade in the channel of the lakes and New York canals, or the channel of the St. Lawrence river. It cannot be done; and the sooner trade takes the new and better channel, the sooner will the Government of the United States undertake those improvements in the navigation which are imperatively required. And it is important to observe that the required improvements in the navigation of the Mississippi and Ohio rivers come within the proper province of the Federal Government; and whatever the amount of outlay, no tolls nor imposts, under the circumstances, can ever be imposed. As the river is at present, it is available for an indefinite extension of the transport trade; but a trifling outlay would not only remove peculiar hazards, but render it available for the inward and outward passage of sailing vessels; and these could penetrate as high as St. Louis, or much higher if required.

But in addition to the advantages of cheaper transportation presented by the Mississippi route, there is, likewise, the important advantage of open water throughout the year. In open

winter weather there is no ice, and therefore no obstruction, as high up as St. Louis; while in the severest weather there is always open water as high up as Cairo. At that period, therefore, when New York and Canadian buyers avoid western markets, the European buyers could step in, and buy on the most advantageous terms; and be wholly independent of the season. Every barrel of flour or bag of wheat purchased could be moved without delay to New Orleans, and from that port to Europe.

The following are the advertised rates of the Illinois Central Railroad, for the transportation of produce from Chicago to New Orleans:

I. Grain, per 60lbs., from Chicago to Cairo, by rail, thence per steam on the Mississippi river to New Orleans	£	s.	d.
II. Bacon, hard beef, &c., per 100lbs., from Chicago to Cairo by rail, thence per steam on the Mississippi to New Orleans.....	0	1	3
	0	2	1

Time on this route, from five to ten days between Chicago and New Orleans.

The publication of such a tariff admits of this one inference: that it is even practicable, or—what is the same thing—profitable, to move produce from Chicago to New Orleans; and if produce, after having borne transportation charges to Chicago, can bear a repetition of those charges from Chicago to Cairo, how much more profitable *a fortiori* direct trade from the upper Mississippi to New Orleans would be! But probably the Illinois Central Railroad Company, in publishing that tariff, thought only of competing with eastern railroads in the transportation of eastern-going produce during the winter season. Be that as it may, it is not the less a striking corroboration of the soundness of the foregoing views, now for the first time advanced, either in the United States or Europe.

In the foregoing, the following are the main points which have been established: British Columbia, the territory of the Saskatchewan, and Lake Superior are, in a grain-producing view, entirely worthless; and it will be impossible to induce settlement so long as lands are open for entry in Illinois, Wisconsin, Iowa, and Minnesota. During periods of high prices—extremely high prices—produce could be moved from Lake Winnipeg with a bare profit; but with wheat in England at 40s., and under, per imperial quarter, the whole price realised for Saskatchewan and Red River wheat would fall short of the producing cost, and the transportation charge. Such being the case, settlement would only end in the impoverishment and unhappiness of the people; and it is questionable whether, even in periods of high prices, the long interval which would invariably intervene before the produce could be brought to market would act as a prohibition altogether. But this other important principle will be brought out fully in the following article; and it will there be perceived that the produce trade, from the Saskatchewan to the seaboard, would generally be nothing more nor less than gambling—a pursuit at variance with all ideas of successful farming.

Closely connected with the subject of the settlement of the Saskatchewan, is the question of the Pacific Railroad; and in view of the present worthlessness of the whole district, such a railroad would necessarily be worthless also.

The fallacy involved in putting forward new schemes of connecting Chicago with the seaboard, on the principle of distance, and not on the principles of necessity and cost, has been adverted to; and the peculiar fitness of the St. Lawrence channel questioned. On this last point, it is asked whether, if Canada had been included in the national domain of the United States, and Louisiana had been the purchase of Great Britain, and the British Government had done for the Mississippi what it did for the St. Lawrence River, whether, under these circumstances, the Mississippi would not now occupy that place in the favour of the public which the St. Lawrence channel does. With respect to the distance test, it is obvious that the public are indifferent whether their property is carried on a bee line or on the circle, so long as it is carried expeditiously and cheap; and it is not less obvious, that if a new channel, by virtue, we shall say, of less construction cost, reduces the transportation charge from one point to another, the other existing channels adopt the same tariff, and, as before, divide the trade. The discrepancies pointed

out in the official statements, of the mere distance from one point to another, will induce public distrust in all interested American reports that may be made hereafter.

The characteristics of the St. Lawrence channel are then adverted to at length, and the various projects pointed out, and made the subject of remark. The reasons of American sympathy to the Georgian Bay Canal, and of American hostility to the opening of the Ottawa River into Georgian Bay, then follow, and place the whole question to the English capitalist in a new and striking point of view.

The case of the lake shipowner follows incidentally, and is shown to be strong enough to justify the strongest possible remonstrances from the British Government.

The question of transportation by railroads, and canals, and steam water-courses, is finally exhausted in placing the whole question of the future course of western trade before the public; and, as the figures are reliable, the results have an important bearing on the present and future opening up of India. The result of the inquiry is substantially this: that, sooner or later, the whole western carrying trade will pass into the Mississippi channel; that Montreal stands in an immensely inferior position to New York; and that New York stands in a still more inferior position to New Orleans. The building of railroads and canals to connect Chicago with New York and Montreal is, therefore, a profound mistake; and all hope of such securities improving with the times is delusive in the extreme.

THE NEW-MOWN HAY.

BY PARK BENJAMIN.

Talk not to me of southern bowers,
Of odours breathed from tropic flowers,
Or spice trees after rain;
But of those sweets that freely flow
When June's fond breezes stir the low
Grass, heaped along the plain.

This morning stood the verdant spears,
All wet with diamond dew—the tears
By night serenely shed;
This evening like an army slain,
They number the pacific plain
With their fast-fading dead.

And where they fell, and all around,
Such perfumes in the air abound
As if long-hidden hives
Of sudden richness were unsealed,
When on the freshly trodden field
They yielded up their lives.

In idle mood I love to pass
These ruins of the crowded grass;
Or listlessly to lie,
Inhaling these delicious scents
Crushed from those downcast, verdurous tents,
Beneath a sunset sky.

It is a pure delight, which they
Who dwell in cities, far away
From rural scenes so fair,
Can never know in lighted rooms,
Pervaded by exotic blooms—
This taste of natural air.

This air, so softened by the breath
Exhaled and wafted from the death
Of herbs that simply bloom,
And, scarcely noted, like the best
Dear friends with whom this world is blest,
Await the common doom—

And leave behind such sweet regret
As in our hearts is living yet,
Though heroes pass away—
Talk not to me of southern bowers,
Or odours breathed from tropic flowers,
But of the new-mown hay.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

At a weekly Council held Wednesday, June 29, present Col. Challoner, Trustee, in the chair, the names of candidates for election were read. Lord Feversham, the Hon. Col. Hood, the Hon. W. G. Cavendish, M.P., Sir J. V. B. Johnstone, Bart., M.P., Sir E. Kerrison, Bart., M.P., Mr. J. Raymond Barker, Mr. Thomas Raymond Barker, Mr. Beale Browne, Mr. Caird, M.P., Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Humberstone, M.P., Professor Simonds, Mr. S. Thompson, Mr. T. Burch Western, Mr. Wilkinson, Mr. H. Wilson, of Stowlangtoft Hall, and Mr. Wood, of Hanger Hill.—

Dr. Voelcker submitted to the Council the following analysis of a Mangel Wurzel which was grown in 1857, and has been kept for nearly two years in an apparently sound condition :—

DETAILED COMPOSITION.

	In natural state.	Calculated dry.
Water.....	92.25 ..	..
*Soluble proteine compounds	.97 ..	12.51
Sugar, gum, and pectin.....	4.08 ..	52.67
Soluble inorganic salts	1.23 ..	15.87
+Insoluble proteine compounds	.16 ..	2.06
Woody fibre (cellulose)	1.18 ..	15.22
Insoluble mineral matter	.18 ..	1.67
	100.00	100.00
*Containing nitrogen	.165 ..	2.00
+Containing nitrogen	.025 ..	.32
Total nitrogen	.180 ..	2.32

The amount of water in this root it will be noticed is as large as in common White Turnips. It is much more considerable than in good Mangels, in which there is an average of 88 to 89 per cent. of water. The proportion of mineral matter in this root is larger than in good roots. Nearly the whole of the mineral matter consists of soluble salts, and more than one-half of these was found to be chloride of sodium or common salt. It appears, therefore, that salt was largely employed in growing the Mangels of which a specimen was analyzed. The proportion of nitrogen in the root is also larger than the average. The legitimate conclusion which may be deduced from the preceding results and observations is that this Mangel, although apparently sound, has undergone some changes which have deteriorated its feeding qualities. Dr. Voelcker's report explained in what manner this deterioration may have taken place, and remarked that it must be a matter of considerable interest to practical men to know how long Mangels can be stored without suffering injury, and what time of the year stored roots had acquired their maximum feeding properties. He also suggested that the large quantity of salt in the Mangel Wurzel which kept apparently sound for two years may have had its share in preserving it for so long a time, and expressed the opinion that the character of the manures used for growing Mangels had a material influence on their composition,

a circumstance which naturally must affect their keeping qualities. Dr. Voelcker stated in conclusion—"In the absence of precise information and experiments, I abstain from further speculating on this subject, and allude to it mainly for the purpose of showing how desirable it is that the whole question should be thoroughly investigated. This can alone be done properly by a systematic series of practical and analytical experiments."

Mr. Fisher Hobbs suggested that in publishing Dr. Voelcker's report in a condensed form it should be stated that the analysis was of one small root only, which had been preserved two years, and that it could hardly be taken as a fair average example of the keeping properties of a whole crop.

A communication was read by Mr. Charles Fulbrook, of Dallington, Hurst Green, giving the result of his investigations of the laws governing the wet and dry seasons occasionally experienced in this country. On the motion of Lord Feversham, seconded by the Hon. Wm. Cavendish, this communication was referred to the Journal Committee, and the thanks of the Council were ordered to be conveyed to Mr. Fulbrook.

M. Tisserand, Inspector of the Imperial Farms in France, transmitted to the Council programmes of the special international competition of reaping machines, to take place at the Imperial Farm of Fouilleuse, near St. Cloud, between July 20th and 25th next. The certificates of entry to be sent by exhibitors to his Excellency the Minister of Agriculture, 78 bis, Rue de Varennes, Paris, on or before July 10th.

The following communications were also received from Mr. Chas. W. Hamilton: A Schedule of Queries issued by the Royal Dublin Society respecting the Condition of Farm Labourers; the Journal of the Agricultural Society of Alger, and the Journal of the Central Agricultural Society of Belgium, for all of which the thanks of the Council were ordered.

Mr. H. Tucker, from the New York States Agricultural Society, presented a letter deputing him to attend on behalf of that Society at the Warwick Show. The Chairman assured Mr. Tucker that the officers of the Society would afford him every facility in their power to enable him to inspect the trials and general exhibition.

The Council then adjourned to the Monthly Council on July 6th.

At a MONTHLY COUNCIL, held Wednesday, July 6, 1859—present, his Grace the Duke of Marlborough, President, in the chair; Lord Camoys; Lord Walsingham; Lord Powis; Lord Feversham; Lord Leigh; Lord Portman; Sir J. V. B. Johnstone, Bart., M.P.; Sir E. Kerrison, Bart., M.P.; Sir J. V. Shelley, Bart., M.P.; the Hon. Colonel Hood; the Hon. W. G. Cavendish, M.P.; Mr. Amos; Mr. Raymond Barker;

Mr. Hodgson Barrow, M.P.; Mr. Barthropp; Mr. Bramston, M.P.; Mr. Brandreth; Colonel Challoner; Mr. Exall; Mr. Foley, M.P.; Mr. Brandreth Gibbs; Mr. Fisher Hobbs; Mr. Kinders; Mr. Knight, M.P.; Mr. Milward; Mr. Pain; Mr. Shuttleworth; Mr. Banks Stanhope, M.P.; Mr. H. S. Thompson; Mr. Torr; Mr. T. Burch Western; and Mr. Wilson, of Stowlangtoft—the following new members were elected:

Ashton, George F., Wheelock House, Sandbach.
Bacon, Rev. Hugh, Baxterley Rectory, Atherstone.
Boarne, James, Basford Hall, Nantwich.
Browne, Thomas Browne, Privy Council Office, Whitehall.
Butt, Henry, Kemerton, Tewkesbury.
Carter, James, Don Farm, Botley, Staffs.
Coomer, Thomas, Basford, Nantwich.
Cooper, Edmund, Henley-in-Arden.
De Vitre, Henry D., Purchase Manor, Sussex.
Duckworth, Russell, Dirleton, Drem, N.B.
Greene, Harry Arthur, Bythorne, Thrapstone.
Hammerton, Charles, Princethorpe, Warwick.
Hunt, Thomas, Thornington, Coldstream.
Higginbotham, Samuel, Castle-Milk, Glasgow.
Home, James R., Church Stretton, Salop.
Lea, Joseph, Grove Mount, Northwich.
Lilly, W. Mence, Money Hill Hall, King's Norton.
Marsh, Thomas, The Heamies, Stone, Staffs.
Preston, W. Scott, Leigh-Chulmleigh, Devon.
Simpson, Alexander, Bridgnorth.
Smith, Apsley, Buxerby Hall, Atherstone.
West, James Roberts, Alycot Park, Stratford-on-Avon.
Yorke, T. E., Hilton Place, Hellfield, Leeds.

The usual monthly report of the Finance Committee was received, with the following addition:—"The members of the Finance Committee also beg to state to the Council that they desire to set the Committee appointed to entertain and report upon the rearrangement of the system of keeping the accounts of the Society perfectly free, by the tender of their resignation."

On the motion of Lord Portman, seconded by Mr. Torr, the above resignation was accepted.

On the motion of Mr. Thompson, seconded by Lord Feversham, the thanks of the Council were voted to the Finance Committee for their past services. On the motion of Mr. Torr, seconded by Mr. Shuttleworth, the Finance Committee were requested to continue to hold office until the new committee be appointed.

Mr. Thompson, chairman of the Journal Committee, reported:—

1. That in Class III., Essay on Steam Cultivation, the prize of £25 is awarded to the Essay bearing the motto "Faint, but pursuing;" and on the seal being broken, Mr. J. Algernon Clarke, of Long Sutton, was declared the author.
2. That in Class VII. none of the Essays are considered worthy of the prize.
3. The following list of subjects for Prize Essays for 1860 is recommended to the Council:—

	£	s.	d.
I. Agriculture of Berkshire.....	50	0	0
II. On the best period of the rotation, and the best time for applying the manure of the farm.....	20	0	0
III. Alterations advisable in farm management, in land of different qualities, by low price of grain and high price of meat.....	10	0	0
IV. Late improvements in dairy practice..	10	0	0
V. Proper office of straw in a farm.....	10	0	0
VI. Amount of capital required for the profitable occupation of a farm.....	10	0	0

- VII. On the condition of seed-bed best suited to the various agricultural crops.... £10 0 0
VIII. On the adulteration of agricultural seeds 10 0 0
IX. Any other agricultural subject 10 0 0

4. The reprint of Dr. Lang's Prize Essay on Potatoes is now laid on the table, and recommended to be sold at the following prices:—

1d. each, or 6s. per 100 to Members of the Society.
1½d. each, or 9s. per 100 to Non-Members.

Lord Leigh, chairman of the General Warwick Committee, presented the report of the Committee in reference to details connected with the Warwick meeting.

Mr. Pain was elected one of the Stewards of Show-yard receipts in place of Lord Portman, who will be unable to attend.

The report of the special Committee on the past accounts of the Society was received and adopted, and the Honorary Acting Secretary was authorized to take steps relative to a deed of assignment executed by the late Mr. Hudson previous to his death.

The Report of the Committee on the duties of Secretary and mode of his appointment having been read, it was resolved, on the motion of Sir John Shelley, Bart., M.P., and seconded by Sir Edward Kerrison, Bart., M.P., "That the office of Secretary and Editor shall not be combined."

It was resolved, on the motion of Lord Feversham, "That the Secretary's salary be 400l. per annum; the Secretary to reside in the Society's house, and have coals and lighting."

It was ordered that advertisements be inserted stating that all applications from candidates for the office of Secretary be sent to the Honorary Acting Secretary on or before the 30th of October next.

The following recommendations of the Committee were confirmed, viz.: That the Secretary shall devote his whole time to the affairs of the Society. That he shall find approved security to the amount of 1,000l. That it shall be considered an additional recommendation to a candidate if he possesses a competent knowledge of French and German.

Other recommendations of the Committee on minor details were also confirmed.

On the motion of Lord Portman, Mr. Brandreth Gibbs was requested to continue to undertake the duties of Honorary Acting Secretary, until a new Secretary be elected.

Mr. Raymond Barker expressed his determination to resign the office of Vice-president.

On the motion of Col. Challoner, Mr. Manning's offer to undertake on the usual terms such works as the Council may hereafter determine upon to require next year at Canterbury, was accepted.

On the motion of Mr. Fisher Hobbs permission was given to the Stewards and Judges of the Show to make arrangements for the trial of Grass-mowing Machines at Warwick, and to report thereon.

Various communications were laid before the Council, and it was decided what replies should be given thereto by the Hon. Secretary.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MEETING AT WARWICK.

Like the moth dazzled by the light of a candle, the bee poisoning himself over a sun-flower, or a bird terribly tempted to peck at the best fruit, the Royal Society of Agriculture seems to be more and more attracted towards the metropolis. Now it nearly sings its wings at Chelmsford. Anon, still hovering around, it settles again almost as handy at Salisbury. Then, it is true, taking a stronger flight, we see the bird of passage striking out for North Wales, though only to return with a greater longing towards its own haven. Warwick brings it once more within range, and Canterbury will mark it down in good easy shot. Until at length, in 'sixty-one, the bird is fairly caught, the queen bee housed, or the foolish fly self-sacrificed. No doubt this gradual approximation to head-quarters is more or less accidental. The different districts remaining to select from have given the Direction but little alternative, and we have thus been forced as it were to hang about home. There are some who perhaps would have us keep here, if it were only on the excellent showing of a gentleman who, a year or two since, bodily proposed as much—because it was so difficult to get beds in country places.

Fortunately there have been few ready to go with such a proposition, and in a year or two's time the Society will be longing again for fresh air and change of scene. Indeed, however successful these neighbouring calls may have been or will be, they naturally fall somewhat in drawing out many new men or introducing much novelty. Some former and more locally remote meetings are still remembered for especial features of their own. Recently, however, we have been losing these landmarks. Essex and Wilts or Hampshire were pretty well acquainted with the Society, as was the latter with the merits of these districts, ere their more formal introduction to each other. In fact, such occasions have passed off without any grand impression either one way or the other, and it could hardly have been otherwise. Both the visitor and the visited were already familiar, and any extraordinary sensation was scarcely to have been expected.

The Warwick Show will be thus written on the record. It was a good average meeting, without anything of special importance to mark its history. The Society, to be sure, still continues to increase in influence, and in some departments the entries were, as usual, "greater than was ever known before." This was more particularly the case with the implements, which were never previously seen in such numbers, and had never been of such general excellence. But even here there was little or no novelty. The steam plough has long been a standing dish at these entertainments; although, perhaps, to people who do not go much from home it is yet the great treat of the day. Certainly in the trial fields, Fowler's plough and

Burgess and Key's new mower had clearly the call. We do not speak here so much of the judges as the common body of spectators, and it is seldom we remember any machinery in work that has recommended itself so strongly to the public. The proprietors or inventors of the new mower should be especially thankful for the official exposition allowed them; while the Society will have to bear in mind even the more from this, how advantageous it may be to travel occasionally a little out of the mere line and rule, of once in three or four years, and take up a point when such authority is really useful and requisite.

In some other divisions of both the stock and the implement departments, the interest and excitement were not so much over what was exhibited as what was done with it. Seldom have precedent and established reputation been so thoroughly upset. It was impossible to turn any way, but you met with some great man discomfited. Jonas Webb had been beaten for Southdowns; the Booths had got the worst of the Shorthorns; and the Howards not as hitherto *all* the best of the ploughs. The office of a judge, we can answer for, is not always the most agreeable of duties; but never did we hear men in authority so fiercely canvassed as some of those at Warwick. Still, it must not be supposed that this discussion would apply equally to the three instances we have given. On the contrary, the Babraham flock was fairly beaten by the best Southdown sheep—the Duke of Richmond's shearing—ever seen in a show-yard. Then, again, the performance of Hornsby's new plough—and finding such a plough in their name was a novelty—was extraordinary for its excellence, and he would have been a bold man who could have stood by the work and disputed the award. But the decrees over the high-bred cattle were by no means so quietly submitted to. One exhibitor, indeed—Mr. Booth, of Warlaby—has gone so far as to lodge a protest over the placing of the shorthorn heifers in-calf. He does this, we believe, on the ground that his Queen of the Isles is not even noticed, and as he maintains she is clearly the best of the class, he demands to know why the Judges have disqualified her. Of course, any such objection as this can never hold water, or every other exhibitor would be making one. It is, however, only fair to say that the majority of the public also regarded this as a mistake, almost every one preferring the Queen to the second prize, and some went so far as to draw a comparison in her favour against the first. But we hardly go to this. Colonel Towneley's is a beautiful heifer, with a lovely head, a wonderfully good line along the back, and unquestionably much the better behind. It is just here that the Queen of the Isles fails; but she is truly magnificent in many other of her points; and it will always be a curious query

how she was entirely passed over? Those learned in the lore will remember that Mr. Booth's was the first prize yearling heifer at Chester.

There is no denying that the Shorthorn Judges at Warwick went on something of a new principle. They would not have mere pedigree or quality answer for everything, but stood out a little more for meat, size, and substance, with symmetry. There were, too, many sound practical men ready to uphold them in what they did. In plain truth, the fashion of thing was manifestly threatening to carry itself a little too far. We were getting to delicate narrow animals, that promised soon to neither milk, breed, nor feed. There was many such an illustration, on the Warwick Show ground; and the courage of the Judges here must lead to a little wholesome correction. Admitting the two-year-old heifer case to have been an error, there was a vast deal of will talk on other decisions, that could have been attributable to nothing but prejudice. There were some, for example, who would have denied Mr. Stratton his honours with Matchless the Fourth, the second at Chester, the first here, and now grown into as fine a cow as ever entered a show-yard. She is a capital roan in colour, has a good head, wonderful chest and brisket, and altogether an extraordinary forehead; while she is beautifully fleshed, and almost as commendable for her general symmetry. In a word, we think no animal was ever more fairly placed, although she did beat, in addition to those named in the prized and commended list, Mr. Douglas's renowned Ringlet, and one or two more equally well-bred ones.

But the strength of the Shorthorns, and we might perhaps go on to say of the whole Show, was in the two-year-old and yearling heifers. It is significant of their uniform goodness to note the award of the judges, who commended everything they saw here. And all the best men were here too—Booth, Colonel Towneley, Douglas of Athelstaneford, Stratton, Grundy, Captain Gunter, Marjoribanks, Noel Hill, Sir Charles Tempest, and Jonas Webb, with comparatively new men, like Mr. Robinson of Clifton, and Mr. Fowler of Henlow. It has been already intimated that the selection from such stock was made by no means altogether upon previous precedent. This was not only remarkable amongst the two-year-olds, but quite as strikingly with the yearlings, some of which had already come together. At Northalerton, for example, the second-prize heifer of Warwick, The Maid of Athelstane, was first, and the first of the Royal Show, Mr. Grundy's Faith, third—Booth's Queen of the Vale, exhibited but not specially noticed here, dividing them. Faith is an animal of great length and fine form, with every promise of further development, although with a little "touching" Mr. Douglas would have not only the best of her entry, but one of the most valuable cows of her sort. She is extraordinary for her touch and quality, has a rare back and quarter, but is rather spoilt by a steer horn and a queerish shoulder. There is little doubt but the two will come together again, and these awards be further adjusted. But it was impossible for a man to go through such a range of animals without making a fancy for himself; and there is plenty of "proof" still to be had out of them.

It has been a common observation of ours for some time past that the Durham cows show far better than the male animals, and this was essentially so at Warwick. Seldom has there been such a mixed lot of bulls at a national meeting. If a visitor had stopped here he would have gone back with no very high opinion of the continued improvement of the improved Shorthorn. The best aged bull, to begin with, and a long way the best of his class, was thought to be nothing beyond a useful animal, although a far better-looking beast than

Lord Feversham's first prize at Chester. His symmetry is much more perfect: he has a good head, with a kindly expression about it, stands very well before, and has a rare back and capital thighs. Still there is a manifest want of style about "Radford," and he is about the worst-coloured animal we ever saw: a kind of creamy trout-spotted one, by courtesy called "a roan." The second to him is the Cobham bull Marmaduke, who has plainly seen his best day. He stands well before, but is anything but level, and threatens altogether to get worse instead of better. The second prize bull at Chester, Marc Antony, and the first prize two-year-old of that meeting, Lord Hill's Hetman, were both of them commended here; but neither is of quite first-class character. In fact, as is commonly the case with them, the pride of the Shorthorns here again was with the younger animals, and two of these commanded a great deal of earnest attention. They were Colonel Towneley's Royal Butterfly, an own brother to Master Butterfly, and Royal Turk, a yearling, the property of Mr. Ambler. It might be a question with some which was the better of the two, although the market evinced no doubt about it. The present representative of the family name and honours has already reached his brother's repute. An offer of twelve hundred guineas on the part of some Australian gentlemen for Royal Butterfly was refused, while Royal Turk was sold to Mr. Langstone for three hundred and fifty. The latter, it must be observed, was not shown amongst the Shorthorns, but in the "cattle best adapted for dairy purposes." This is something of a distinction without a difference, as nearly all the animals entered were well-bred Shorthorns, some of the pairs of cows being amongst the grandest, and certainly at the same time most useful-looking stock on the ground. It was curious to see how soon Royal Turk was found out here, even in such disguise, while Butterfly's more prominent position amongst his own order commanded for him one continual crowd of admirers. He is certainly a most taking animal, with as true and handsome a bull's head as poet could wish to sing of, or painter to sketch.

If we consider the locality in which they were exhibited, the Herefords can hardly be said to have realized what was expected of them. But nothing is more uncertain than a show of this kind of stock, and nothing more uneven than the present one. There appears to be an under-current of feeling amongst the breeders, as to what the type of a Hereford should be. In many herds the original grand size has been departed from, and a neater, closer standing beast substituted. The latter would now appear to have the call. Mr. Hill's bull, the first in his class at Chester, and the best aged bull here, has nevertheless, not much improved. He is a compact, short-legged, broad-standing beast, but very dark in his colour, rather patchy, and decidedly bad about the rumps. Some of those behind him had their partisans, while the most liked of all was a very handsome young bull of the Prince Consort's, that deservedly stood as the first of his set. The second prize two-year-old, a very well-formed beast, is noticeable as having been calved in the yard at the Salisbury show, and hence his name. It struck us the cows and heifers evinced more of the true, fine character of the Hereford than the males; and some of them were really perfect specimens of their kind. Still neither these nor the Devons had anything like the popularity of the Shorthorn, notwithstanding that the latter were especially well represented. Mr. Quartly, Mr. Turner, Mr. Merson, and His Royal Highness the Prince Consort, sent some patterns of purity, and these were well backed by Mr. Farthing, Mr. Umbers, and others. Mr. Farthing's prize bull is of great length, and Mr. Quartly's particularly handsome. An old

favourite of ours, however, Mr. Merson's Prince of Wales, could get no further than a commendation; but the gem of the Barnstaple show, the Prince's yearling, distinguished herself as we anticipated. She was only beaten for first place by a yet more handsome heifer than herself—another of the Quarty's. But His Royal Highness may honestly plume himself on his Devon herd, bred with remarkable care and judgment, and showing perhaps even to more genuine advantage at the Norfolk Farm than even on the course at Warwick. In the cow classes, the awards recently made in the West-country were partially corrected, and with little question as to the wisdom so exercised by the superior court. Still there was no desire shown to pass over good useful properties when duly combined with the orthodox points of that most attractive-looking and truly symmetrical animal—the North Devon.

If the Warwick show be remarkable for any one feature in which it surpasses the previous meetings of the Society, it is in the entries of riding horses. Taking the general strength of stallions, mares, and hunters, they have never been so good. This, no doubt, may in some measure be accounted for, from our being here in the very centre of a famous hunting country; but, still, in proof of the increasing interest evinced for such classes, many of those exhibited were sent from long distances. The section opened well with as good looking a thorough-bred horse for getting hunters the Royal gatherings have ever yet attracted. Hunting Horn, to begin with, is by far the best-bred horse of the lot; but he combines with this the most extraordinary power, size, and substance. In fact, he was so big as a young one, that he never could be properly prepared, and even now at five years old he can hardly be said to have quite formed or furnished. Should he only go on right, and fine a little about the shoulder, he must in a year or two's time develop into a magnificent animal. When we remember such prize stallions as Spencer, Ravenhill, and Loutherbouurg, we may well feel satisfied with such a successor to them as Hunting Horn. The thorough-bred horse award at Chester last year was "corrected" the very next week in Yorkshire; but we should think a new trial need hardly be granted here. Still there were two or three well-known horses sent, such as The Ugly Buck, Sprig of Shillelagh, and Sir Peter Laurie. The last-named of these is not so great a horse as one would expect to see; and The Ugly Buck, light and very racing-looking, has the credit of getting better hunting stock than he would quite promise to do. Three or four very coarse, evidently half-bred animals were also shown in this class, but of course unnoticed. The hunting mares, as a lot, were better; and there were some half-dozen of them especially good. The prize in the first instance was awarded to perhaps the finest mare for such a purpose ever seen on a show-ground. She is now the property of Mr. Fowler, of Aylesbury, but was sold two or three years since for no less than nine hundred guineas to carry the Empress of the French. Her right eye, however, went, either from disease or accident, and she re-crossed the Channel. The veterinary surgeons attributing its loss to the former cause, refused to pass her; although up to the end of the week "Empress" appeared in the list as the first prize mare. We were bold enough to inquire of one of these inspectors how it was she was first on the list and nowhere in the show itself. His reply was, that "it was simply a clerical error," which is a fine Delphic oracle kind of answer, no doubt, though what it really means we have not even now the slightest possible idea. If we stood in Mr. Fowler's place we should distinctly request to know why the veterinary surgeons disqualified his entry after the judges had passed her. Such a protest

is a very different kind of objection to that of Mr. Booth. Blindness may or may not be hereditary, and we will not venture to say which it is in this case; but nine times out of ten it is not, and at any rate Mr. Fowler is surely entitled to know "the reason why." The famous stallion Defence was blind for many years, but few of his stock, that we are aware of, took this malady from him. A thorough-bred brood mare, the property of a near relative of our own, was stone blind when put to the stud; but she threw nearly a dozen foals that were trained, hunted, and ridden as hacks, without one thus failing. Horses go blind from infinite causes—over feeding, bad stabling, hard work, and all kinds of things. But it yet remains to be proved that any of these are hereditary, or, in other words, disqualifying reasons. Mr. Fowler distinctly asserts his mare went wrong from an accident; the veterinary surgeons, on the other hand, trace this to primitive disease. The question is, which of the two is the real fact. Of course "a clerical error" is no answer at all, especially as one of the judges assured us they had picked her out as the prize mare. Even more than this, the other eye might "go" from mere sympathy, and at any rate the point is worthy of some more definite explanation than that conveyed in "a clerical error."

The premier honour is, however, now claimed by Mr. Holland, with a very clever-looking mare, whose antecedents in the way of pedigree, like that of the Empress, are altogether unknown. As a consequence, Mr. William Shaw, of Coton, succeeded to the second place with a Mundig mare, accompanied by a most extraordinary foal, an early one certainly, but as well grown, handsome, and promising as any man could wish to see. Oulston has the credit of him, and the peculiar lop ear answers of itself for the paternity. Amongst the remainder was a thorough-bred one by Bay Middleton, known as Days of Yore; a really beautiful chesnut, uniting blood and power, and intrinsically about the most valuable mare of the entry. No less than four-and-twenty were nominated for the hunter prize, and the judges commended every one of them. In a word, the Society is making a wonderful advance in this way, and there really was hardly a horse shown but his owner might have fairly expected to win with him. By some happy instinct the judges again got hold of the best-bred one—by Drayton, dam by Steamer—the very pedigree for a hunter, and a horse of rare, grand style, with a beautiful flat leg, over seven inches round below the knee. Lord Berners stood second with Barbara, and then we had Mr. Booth highly commended for a very clever Barnton horse, and Mr. Formby and Mr. Arkwright as greatly distinguished. Many leant also to a bright bay of Mr. Berry Congreve's, as "about as good as anything," and we hear he was sold during the week at a long figure. The ponies did not muster so strong, but they were all good. Mr. Cresswell Wall sent two that we noted at the time as in favour at Barnstaple; a very pretty one of Mr. Sullivan's came from Dublin, and Sir Piers Mostyn, as at Chester, headed the class with that handsome galloway, Young Bantam. But it was hardly fair to compare him with that little bit of perfection, the brown Monmouthshire pony at his side. The hack mares were indifferent, and, on some showing we cannot understand, the judges appeared to select the most under-bred hairy-heeled of them all. However, quite enough was done at Warwick to prove that the Royal Agricultural Society can accomplish that which the Council once declared they never could—a creditable or even excellent entry of riding horses. Moreover, be it ever remembered that it is decidedly one of the most popular sights of the show.

The agricultural horses were not so generally com-

mendable, and hardly in any way up to the mark of some former anniversaries. Neither of the two prized all-aged stallions were really first-class horses; and the judges had some difficulty in deciding which was the better of them. The preference, on a division, was given to a smart, compact Lincoln horse, with the strong drawback of indifferent action. Mr. Clayden's Suffolk has already been distinguished as the best yearling at Chelmsford and the best two-year-old at Salisbury. He is a famous topped horse, of great size, but with something very like a malformation in one of his feet. Although so far so good, the Suffolk men fancied something better of their sort had been passed over, but the breed took a much better standing than it often has done at the Royal Meeting. Mr. Frost, Mr. Wrench, Mr. Badham, and Mr. Barthropp sent some of those famous mares we have had so much to say of lately; and Mr. Crisp had his "Emperor," which did get a prize at Chester, and that all his friends declared should have had one now. He is grown into a grand colt, and is sure to be heard of again. It is remarkable, as showing the strength of one particular strain, that the best mare, the second mare, and the best two-year-old filly were all by the same horse, "Royal Duke." There was a ready market for the chestnuts even in this land of blacks, browns, and greys; and Mr. Frost sold his mare for 120 guineas, Mr. Wrench his two-year-old for 90 guineas, and Mr. Barthropp a lot, of a mare, her foal, and a two-year-old, for something over two hundred, to Lord Shrewsbury. Neither of the Crettingham horses was entered. The "Hero," indeed, has shown temper this season, and Mr. Rarey was to reason with him at the Alhambra on Saturday last, but we did not get up in time to witness their interview. A Suffolk on his marrowbones would be something of a sensation for the West-end class!

Judged by their own merits, and altogether independent of any peculiar fancy or fashion, the two best stallions for agricultural purposes were the first prize dray horse and Mr. Holland's bay two-year-old. The latter distinguished himself at the West of England meeting last month, when we spoke of him as "promising to furnish out into a great fine horse;" a notion which his visible improvement since then goes more and more to confirm. The dray horse, England's Glory, got by England's Glory, and he himself the sire of England's Glories, an echo that must lead to confusion sooner or later, still bears marks of the mishap he met with last year on his way to Chester. But he shows remarkably well. Lively and active, of immense power and substance, short on the leg and very true in his symmetry, it is pardonable to find his owner challenging all the world with him. There were some other good Shire horses, as the prize lists will show, and one or two of no great style, so adorned with the prize medals of previous years, that people wondered where or how long since they gained them. The black horse of the Midlands must be going out of repute, at any rate he was very scantily represented here, and it is seldom at a national show we have had the Clydesdales in such little force. The Prince Consort sent one of his own breeding, which took a second prize, a neatish, close-made filly, by the Chelmsford Britain, that we recognized at once the other day from his clever action, as he took his morning walk at bush harrow, near the Shaw Farm. The Warwick local premiums for cart horses were noticeable for a few capital working pairs, some of them wonderfully well matched.

The strength of the Sheep Show centred clearly in the short-wools. Notwithstanding that Mr. Sanday and Mr. Pawlett lent their aid to the Leicesters, the class was not much fancied, and the theaves particularly were objected to, as light and delicate, and deficient in

that great recommendation to an Englishman—a good leg of mutton. With still some good rams to recover them, the Leicesters were, as a whole, below the average of many former meetings. The Southdowns, on the contrary, were never so good. As we have already intimated, the Duke of Richmond was declared to have the best type of a Down ram that has ever been exhibited. We have long maintained there is a purity of character about his Grace's flock which scarcely any other can demonstrate. Whether this be attributable to care, climate, or soil, we cannot say: perhaps to a combination of the three. Great care has clearly been evinced in crossing with some of the picked of Mr. Jonas Webb's rams, and the result is that the latter for the time at least is well beaten. In the Shearling Ram class Mr. Webb entered no less than eleven and the Duke but four. The award, however, was never, we believe, for a moment disputed, and the shearling Southdown vied with Royal Butterfly, the four-year-old hunter, and Mr. Harrison's pig, for the great honours of the occasion. The Babraham entry did not extend beyond this, and amongst the all-aged rams and the ewes, the Duke had consequently an easy victory. Mr. Rigden, in fact, was the only man who came at all near him; while Lord Walsingham, who seems to depend quite as much on feeding as breeding, had in such company not "the ghost of a chance." The Short-wools "not Southdowns" were in their collected force yet more remarkable. In truth, there never was such a lot—either for so many or so good. There were Oxford Downs, West Country Downs, Shropshire Downs, and Hampshire Downs—each variety with some especial characteristics of its own; but all with those great points for the farmer—plenty of mutton and wool. The judges here, again, commended whole classes; but they went for choice to the West Country, and great was the admiration over Mr. Humphrey's entries. The Oxfords stood next, with Messrs. Druce, Bryan, and Charles Howard, asserting the rights of this *novus homo*. The Shropshires had an especial class to themselves, and generally a good even show of them, but hardly evincing that advance which has latterly been expected. The Cotswolds had, as usual, all the call of the other long-wools, with Mr. Garne, Mr. Fletcher, and Mr. Walker this year in the ascendant. But the breed did not command that attention it would have done in other localities. What people dwelt on here in the way of varieties was not so much "other long wools" as "other short wools."

In no division was the improvement more decided than in this year's exhibition of pigs. Almost the only objection now is to the sub-division made amongst them, so indefinite as to be little more than a mere matter of fancy. One man calls his a "large," and his neighbour his litter "a small breed," and as scarcely any one could say which was which, the distinction passes accordingly. Surely a much better way would be to classify them as blacks and whites. However, a good pig, like a good horse, can hardly be of a bad colour, and whites, and Berkshires, and blacks and whites, and Essex and Suffolks alternated in the ascendant. As usual, there were some lamentably over-fed, and one immense white beast died early on the Wednesday. We wonder if it ever happened that a judge disqualified a pig for being over-fed? However, the judges here were evidently well satisfied with what they saw. They commended generally every class of Berkshires brought before them, and they did as much for some other sorts in the local list. There was more meat and less offal. The big pigs especially were the "cleaneest" they had seen, and Mr. Harrison's white boar was a very marvel of size and quality. He was two feet four and a-half across the shoulder; he was six feet five in the girth round behind the shoulder; he

was smart and active when you had him up; and, as we have declared already, he was one of the sights of the day. The Berkshires were, again, never more "evenly" good, and never better, and the Prince Consort sent the prettiest and most perfect white Windsoors his Royal Highness has ever yet bred. There was no poultry show, and certainly nobody seemed to miss it more than Mr. Harrison Weir.

We must ask some of our own staff to complete the picture, and to say how the implement makers fared, the judges worked, the stewards acted, and the public behaved. The latter, if anything, were almost a little too much interested, and the manner in which at times they got in the way was something to try the most even-tempered of men, the state of the thermometer and all things considered. In the trials of the ploughs and mowers more particularly, the mere lookers-on were wonderfully active. They advised the judges, they counselled the exhibitors, and they defied the stewards with great resolution and authority. But still there was something to be offered in extenuation. They really did take a part in what was going on, as they proved before the week was out. Never before were there such good customers. Never yet did "the trade" do so good a business. From Mr. Fowler and his steam-plough down to swing-gate and pulper makers, many were fairly sold out. The trials resulted in some two or three very noticeable conclusions. Fowler's plough, for one, was indisputably the favourite in both its work and machinery against Smith's cultivator, and the public went generally with the decision. Then, Burgess and Key's mower confirmed the reputation that had preceded its arrival here. It did its work well, easily, and with a certain simplicity in its action that are all sure to tell. We have already referred to "the surprise" occasioned by Messrs. Hornsby's success with their new plough. It will be found that they stand first for both the light and the heavy land; but that the Howards still keep their position intact as the makers of the famous general purpose plough. Hornsby has something of a novelty in the construction of his implement, which is detailed elsewhere, but it was confided to a Bedfordshire man to carry it out. The ploughman Browne was originally with the Duke of Bedford, at Woburn, and subsequently we believe with the Messrs. Howard. He has profited by his education, and been champion in many an All England match. The only wonder is how he was allowed to leave his own neighbourhood. The Ransomes' second and second over again went to assert something of a distinction without a difference, and as we said last week, it was from the first a hard struggle between Grantham, Bedford, and Ipswich.

As, then, a business week, and as one in which the gradual improvement in the real uses of agricultural machinery is more than ever apparent, we can speak well of Warwick. As a stock show it is also to be upheld, while as a well-managed meeting it is beyond all praise. The Stewards in the field and the yard were alike worthy of the trust reposed in them, and if Mr. Brandreth Gibbs never took a prize for "good conduct" at school, he has fairly earned it now. It would have been almost impossible to have found any other man to do all he did here—with the same dispatch, methodical arrangement, temper, and decision. We never saw him once at fault, and we remember nothing to find fault with. The Local Committee, too, did all in their power, and did it well. But we stop here. The Council and the Society were welcomed after a fashion almost hitherto without precedent in the history of these Meetings. The weather was warm, and the strangers were pressed to have whatever they liked to drink—at their own expense. Even some amongst the most worshipful were

all but myths, and one was supposed to be hidden somewhere or other on the course, with an apocryphal case of champagne under his arm. There was the Castle to be "seen" to be sure—at certain times and by special ticket; and many a hungry wanderer was regaled—with a look at the bone of the famous Dun Cow. There was a ball at which anybody got in at so much a head—and the talking fish to be consulted on the same terms—and the minstrel somebody at a shilling each—and so on. The Stewards and Council in very charity had some of the poor County people to dine with them every day, and so of course everything went off uncommonly well, and everybody was perfectly satisfied, and so forth. But of all the inhospitable regions, of all the make-believe welcomes of flags and flowers—we say no more, but turn our backs on Warwick, and find old Falstaff's ease and comfort in that best of hostleries, "The Crown," at Leamington. "The toast of the evening, gentlemen, is our noble selves, and many thanks to us for the manner in which we have managed to get on."

The General Meeting was held, as usual, on the Friday, when, as somebody said, "Mr. Sidney made his usual speech." We shall allow it to tell its own story. Unfortunately for its effect, a good deal of the ground had already been cleared, and one of its best points was the recent vote of thanks to the Finance Committee, who, from their acknowledged incapacity, had been compelled to resign! We might as well have passed a vote of thanks to the town and county of Warwick, for the hearty hospitality with which the Society had been received. As it was, a vote of thanks was really offered to the Railway Companies, for combining to keep the people out of the way by not running excursion trains. As a consequence the attendance on both Thursday and Friday, despite the finest of weather, was some thousands below that at Chester. But altogether there was a far better tone about the General Meeting. There were more members present, and a much readier inclination evinced to depose King Log and General Routine. Indeed, everybody appeared to go with the times but Mr. Caldwell, who thought farmers could not be induced to attend meetings of the Society, and who must know already, from his experience of another such a society down in the West, that farmers cannot by any means be brought out. Suppose Mr. Caldwell was to look a little in the other direction, and ascertain how the farmers now on the Council do attend, and how often some of the great people come. We believe there are many of the latter who don't get into Hanover-square from one year's end to the other. It will never do to keep trimming and fiddling about the ship in this way, but let her go ahead with a broad sail. If you want a good crew to man her, only offer them fair terms; they will enter fast enough, and stick to her as long as she can float.

PRIZES FOR CATTLE.

SHORT-HORNS.

JUDGES.—Charles Stokes, Kington, Kegworth.
James Topham, Welford, Northampton.
John Wright, Chesterfield.

Bulls calved on or before the 1st of July, 1857, and not exceeding six years old.

First prize of £80 to John H. Bradburne, of Pipe Place, Lichfield (Radford).

Second of £15, to the Hon. Colonel Pennant, M.P., of Penrhyn Castle, Bangor, Carnarvon (Marmaduke).

Third of £5, to Stephen Gooch, of Honingham, Norwich.
Highly commended.—Viscount Hill (Hetman), John T. Noakes (Prince Alfred).

Commended.—Lord Feversham (Prince Imperial), Miss E. Barrowby (Marc Antony), William Todd (Young Heir-at-

Law), Sir C. E. Tompsett, Bart. (Emperor Napoleon), and Jonas Webb (Sir Charles).

Bulls calved since the 1st of July, 1857, and more than one year old.

First prize of £25 to Lieut.-Colonel Towneley, of Towneley Park, Burnley, Lancaster (Royal Butterfly).

Second of £15, to Henry Ambler, of Watkinson Hall Farm, Halifax (Prince Talleyrand).

Third of £5, to John Lynn, of Stroxtun, Grantham, Lincoln (Great Comet).

Highly commended.—John Armstrong (Vatican).

Commended.—John Hall (Robin Hood).

Bull Calves, above six and under twelve months old.

First prize of £10 to Wm. Fletcher, Radmanthwaite, Mansfield (Prince of Warwick).

Second of £5, to Richard Stratton, Broad Hinton, Swindon (Magician).

Highly commended.—Richard Stratton (Mara), and Lieut.-Col. Towneley (Bow Bearer).

Commended.—Wm. Wells (Prince Imperial).

Cows in milk or in calf.

First prize of £20 to Richard Stratton (Matchless the Fourth).

Second of £10, to Richard Eastwood, of Swinshaw, Burnley, (Rosette).

Third of £5, to Wm. Todd, of Elphinstone Tower, Tranent, Haddington (Volga).

Highly commended.—John Hutt (Favourite).

Commended.—The Hon. Colonel Pennant, M.P. (Moss Rose), and John Armstrong (Virginia).

Heifers in milk or in calf, not exceeding three years old.

First prize of £15, to Lieutenant-Colonel Towneley (Fidelity).

Second of £10, to Francis Fowler, of Henlow, Biggleswade (Daisy).

Third of £5, to Lieut.-Col. Towneley (Pearl).

Highly commended.—Lieut.-Col. Towneley (Emma), Stewart Marjoribanks (Vesta), and James Douglas (The Lady of Athelstone).

Commended.—Stewart Marjoribanks (Elegance), Captain Gunter (Moss Rose), and Edward Bowly (Songstress).

The class generally commended.

Yearling Heifers.

First prize of £15 to John Grundy, of The Dales, Stand, Manchester (Faith).

Second of £10, to James Douglas, of Athelstaneford Farm, Drem, Haddington (The Maid of Athelstone).

Third of £5, to Captain Gunter, of The Grange, Wetherby (Duchess 77).

Highly commended.—John Grundy (Victoria Regina), Richard Stratton (Matchless 6th), The Hon. and Rev. T. H. Noel Hill (Orange Profferer), Lieutenant-Colonel Towneley (Precious Stone), and Jonas Webb (Lady Alice Burdett).

Especially commended.—Richd. Stratton (Bee).

The class generally commended.

HEREFORDS.

JUDGES.—E. L. Franklin, Ascott, Wallingford.

Henry Trethewy, Grampound.

Bulls calved on or before the 1st of July, 1857, and not exceeding six years old.

First prize of £30 to Richard Hill, of Golding Hall, Shrewsbury (Claret).

Second of £15, to Lord Berwick, of Cronkhill, Shrewsbury (Severn).

Third of £5, to John Williams, of St. Mary's Kingland, Leominster (Sir Colin).

Commended.—His Royal Highness the Prince Consort (Windsor), and John Naylor (Lucknow).

Bulls calved since the 1st of July, 1857, and more than one year old.

First prize of £25 to John Naylor, of Leighton Hall, Welshpool (Adjutant).

Second of £15, to William Perry, of Cholstrey, Leominster (Salisbury).

Third of £5, to Thomas Edwards, of Wintercott, Leominster (Leominster).

Bull calves above six and under twelve months old.

First prize of £10 to His Royal Highness the Prince Consort, Windsor Castle (Maximus).

Second of £5, to Chas. Vevors, of Ivington Park, Leominster (Stratagem 3rd).

Highly Commended.—Lord Berwick (Thickast).

Commended.—Lord Bateman (Sir Howard), and Lord Bateman (Warwick).

Cows in milk or in calf.

First prize of £20, to Thomas Rea, of Westonbury, Pembridge (Bella).

Second of £10, to Lord Berwick (Beauty).

Third of £5, to Rees Keene, of Pencraig, Caerleon, Monmouth (Beauty).

Highly commended.—George Pitt (Perfection).

Commended.—George Pitt (Countess). Philip Turner (Graceful).

Heifers, in milk or in calf, not exceeding three years old.

First prize of £15, to James Rea, of Monasught, Knighton, Radnor (Csarina).

Second of £10, to Lord Berwick (Ada).

Third of £5, to John Naylor (Laura).

Highly commended.—Lord Bateman (Vesta). Thomas Roberts (Gipsy Queen).

Yearling Heifers.

First prize of £15, to Edward Price, of Court House, Pembridge, Leominster (Well-a-Day).

Second of £10, to the Rev. Archer Clive, of Whitfield, Hereford (Laura).

Third of £5, to Edmund Wright, of Halston Hall, Oswestry (Silver).

Highly commended.—Edward Price (Miss Coningsby). Philip Turner (Countess).

Commended.—James Rea (Diadem).

DEVONS.

JUDGES.—E. L. Franklin, Ascott, Wallingford,

Henry Trethewy, Grampound.

Bulls calved on or before the 1st of July, 1857, and not exceeding six years old.

First prize of £30, to Walter Farthing, of Stowey Court, Bridgewater (Sir Peregrine).

Second of £15, to John Quartly, of Molland, South Molton (Duke of Chester).

Third of £5, to Thomas White Fouracre, of Durston, Taunton (Napoleon).

Commended.—James Merson (Prince of Wales).

Bulls calved since the 1st of July, 1857, and more than one year old.

First prize of £25, to John Quartly.

Second of £15, to His Royal Highness the Prince Consort (The Colonel).

Third of £5, to William Hole, of Hannaford, Barnstaple (Ikbal).

Commended.—Samuel Umbers (Birmingham 5th).

Bull Calves above six and under twelve months old.

First prize of £10, to William Hole (Comet).

Second of £5, to George Turner, of Barton, Exeter (Earl of Warwick).

Commended.—Samuel Umbers (Birmingham 6th).

Cows in milk or in calf.

First prize of £20, to James Merson, Brinsworthy, North Molton (Lovely).

Second of £10, to Walter Farthing (Nelly).

Third of £5, to James Quartly, of Molland House, South Molton (Sylph).

Highly commended.—Samuel Umbers (Tulip).

Heifers, in milk or in calf, not exceeding three years old.

First prize of £15, to James Quartly (The Gem).

Second of £10, to George Turner (Vaudine).

Third of £5, to Edward Pope, of Great Toller, Maiden Newton, Dorset (Fancy the 3rd).

Highly commended.—James Hole.

The class generally commended.

Yearling Heifers.

First prize of £15, to John Quartly.

Second of £10, to His Royal Highness the Prince Consort (Lovelia).

Third of £5, to John Mildon, of Woodington Farm, Witheridge, Devon (Jenny Lind).

Highly commended.—James Quartly.

The class generally commended.

OTHER ESTABLISHED BREEDS

Not including the Shorthorn, Hereford, or Devon Breed.

JUDGES.—John Clayden, Littlebury, Saffron Walden,
John Parkinson, Ley Fields, Newark,
John B. Thompson, Anlaby, Hull.

Bulls calved on or before the 1st of July, 1857, and not exceeding six years old.

Prize of £10, to the Hon. Col. Pennant, M.P., of Pearhyn Castle, near Bangor, Carnarvon (Wales).

Highly commended.—The Earl of Southesk (Polled Angus).
Commended.—His Royal Highness the Prince Consort (Alderney).

Bulls calved since the 1st of July, 1857, and more than one year old.

Prize of £10, to John Turville, of Hartley Park, Alton, Hants (Jersey).

Commended.—Lord Sondes (Norfolk Polled).

Cows in milk or in calf.

Prize of £10, to the Earl of Southesk, of Kinnaird Castle, Brechin, Forfar (Polled Angus).

Highly commended.—Richard Hawkes (Long-horn).

Commended.—The Rev. R. T. Forester (Alderney).

Heifers, in milk or in calf, not exceeding three years old.

Prize of £10, to Lord Sondes, of Elmham Hall, Thetford (Norfolk Polled).

Yearling Heifers.

Prize of £5 to The Earl of Southesk (Polled Angus).

Highly commended.—Lord Sondes (Norfolk polled).

HORSES.

AGRICULTURAL HORSES GENERALLY.

JUDGES.—J. Morley, Eppingham, Croydon.

C. Randall, Chadbury, Evesham.

W. C. Spooner, Eling, Southampton.

Stallions foaled on or before the 1st January, 1857.

First prize of £25, to John Hemmant, of Thorney Fen, Peterborough (Lincoln, Emperor).

Second of £15, to Samuel Clayden, of Linton, Cambridge (Suffolk, Royal George).

Third of £5, to Henry Hitchcock, of Chittern All Saints, Heytesbury, Wilts (Warwick and Suffolk, Champion).

Highly commended.—Edward and Matthew Reed (Shire, England's Glory).

Commended.—John Lowe (Grey), Thomas Crisp (Suffolk, Marquis).

Stallions foaled in the year 1857.

First prize of £20, to Edward Holland, of Dumbleton Hall, Evesham (Shire).

Second of £10, Robert Henry Wrinch, of Harkstead, Ipswich (Suffolk, Comet).

Mares and Foals.

First prize of £20, to Charles Frost, of Wherstead, Ipswich (Suffolk, Diamond).

Second of £10, to G. D. Badham, of Bulmer, Sudbury (Suffolk, Duchess).

Commended.—N. G. Barthropp (Suffolk, Gyp).

Two-years-old Fillies.

First prize of £15, to Leonard Wrinch, of Arwarton, Ipswich (Suffolk, Diamond).

Second of £10, His Royal Highness the Prince Consort (Clydesdale, Jenny).

Dray Horses.

Stallions foaled on or before the 1st January, 1857.

First prize of £25, to Benjamin Taylor, of New Road, Peterborough (Lincoln, England's Glory).

Second of £10, to John Hemmant, of Thorney Fen, Peterborough (Shire, Thumper).

Stallions, foaled in the year 1857.

First prize of £15, to Thomas Hibbard, of Bishopstone, Farrington (Shire, Lord of the Manor).

Second of £5, to William Buller, of Hanwell Fields, Benbury (Shire, Champion).

Commended.—John Manning (Shire, Young Matchless).

Mares with Foal at foot.

First prize of £20 to William Lowrie, of Cadoxton, Cardiff (Herefordshire, Stout).

Fillies foaled in the year 1857.

First prize of £10 to Thomas Russell, of Hodwell Manor, Southam (Shire).

OTHER HORSES.

JUDGES.—J. H. Bland, Thorpe, Newark.

T. Brooks, Croxby, Caistor.

Henry Thrauell, Royston.

Thorough-bred Stallions for getting hunters.

First prize of £25, to John Wadlow, of Shiffnal, Salep (Hunting Horn, by Surplice out of Ferina, by Venison).

Second of £15, to William Barnett, of Bay's Hill Lawn, Cheltenham (Sir Peter Laurie, by The Saddler, out of Well-a-Day by Priam).

Brood Mares, with foal at foot, or in foal, for breeding hunters.

First prize of £20, to Charles Aikin Holland, of Harford Hill, Northwich, Cheshire (breed unknown).

Second of £10, to William Shaw, of Far Cotton, Northampton (mare by Mundig, and foal by Oulston).

Brood Mares for breeding Hackneys.

First prize of £15, to Walter Coleman, of Kingsbury Hall, Tamworth (breed unknown).

Second of £5 to Samuel Wallis, of Barton Seagrave, Kettering (Pet, by Merrylegs).

SHEEP.

LEICESTERS.

JUDGES.—J. Bodley, Stockley Pomeroy, Crediton.

R. Hewitt, Dodford, Weedon.

N. C. Stone, Rowley Fields, Leicester.

Shearling Rams.

First prize of £20, to William Sanday, of Holme Pierrepont, Nottingham.

Second of £10, to William Sanday.

Third of £5, to William Sanday.

Rams of any other age.

First prize of £20, to Thomas Edward Pawlett, of Beeston, Sandy, Beds.

Second of £10, to Thomas Edward Pawlett.

Third of £5, to William Sanday.

Highly commended.—William Sanday, for another ram.

Commended.—William Sanday, for a third ram.

Pens of Five Shearling Ewes of the same flock.

First prize of £20, to William Sanday.

Second of £10, to William Sanday.

Third of £5, to Lieutenant-Colonel Inge, of Thorpe Constantine, Tamworth.

SOUTH DOWNS.

JUDGES.—H. Fooks, Whitechurch, Blandford.

H. Logar, Hengrave, Bury St. Edmund's.

E. Trumper, Nuneham, Oxford.

Shearling Rams.

First prize of £20, to the Duke of Richmond, of Goodwood, Chichester.

Second of £10, to Jonas Webb, of Babraham, Cambridge.

Third of £5, to Jonas Webb.

Highly commended.—The Duke of Richmond, for two other rams.

Commended.—William Rigden, for two rams, and Jonas Webb, for a third ram.

Rams of any other age.

First prize of £20, to the Duke of Richmond.

Second of £10, to William Rigden, of Hove, Brighton.

Third of £5, to William Rigden.

Highly commended.—Sir R. G. Throckmorton, Bart.

Commended.—William Rigden, for a third ram.

Pens of Five Shearling Ewes, of the same flock.

First Prize of £20, to the Duke of Richmond.

Second of £10, to the Duke of Richmond.

Third of £5, to William Rigden.

Highly commended.—Sir R. G. Throckmorton, Bart.

Commended.—The Duke of Beaufort.

LONGWOOLLED SHEEP.

(Not qualified to compete as Leicesters.)

JUDGES.—W. Bartholomew, Goltso, Wragby.

H. Bateman, Asthall, Witney.

H. Beever, Baraby Moor, East Retford.

[All these Prize Sheep were Cotswolds.]

Shearling Rams.

First prize of £20, to Robert Gams, of Aldsworth, Northampton.

Second of £10, to Robert Garne.
Third of £5, to George Fletcher, of Shipton Sollars, Cheltenham.

Highly commended.—Robert Garne, for a third ram, James Walker, and John Gillett.

Commended.—George Fletcher, for two other rams; Edward Handy, for two rams; John Gillett, and Thomas Porter.

Rams of any other age.

First prize of £20, to Thomas Porter, of Baunton, Cirencester.

Second of £10, to Robert Garne.

Third of £5, to George Fletcher.

Highly commended.—Thomas Porter, and Edward Handy, for two rams.

Commended.—Robert Garne, for two other rams; and William Smith.

Pens of five Shearling Ewes, of the same flock.

First prize of £20, to Thomas Walker, of Yanworth, North-leach.

Second of £10, to William Lane, of Broadfield Farm, Northleach.

Third of £5, to George Fletcher.

Highly commended.—William Lane, and T. Beale Browne.

Commended.—T. Beale Browne, William Lane, and John King Tombs.

SHORTWOOLLED SHEEP.

(Not qualified to compete as Southdowns.)

JUDGES.—J. Blundell, Bursledon, Southampton,

J. Burgess, Launceston, Blandford,

J. Rawlence, Bulbridge, Wilton.

Shearling Rams.

First prize of £20, to William Humfrey, of Oak Ash, Chadleworth, Wantage (West Country Down).

Second of £10, to William Humfrey (West Country Down).

Third of £5, to William Humfrey (West Country Down).

Highly commended.—William Humfrey (West Country Down), Charles Howard (Oxford Down), John Bryan (Oxford Down), and Joseph Druce (Oxford Down).

Commended.—The Duke of Marlborough (Oxford Down), William Gillett (Oxford Down), and Sampson Byrd (Shropshire Down).

Rams of any other age.

First prize of £20, to Samuel Druce, of Eynaham, Oxford (Oxford Down).

Second of £10, to William Humfrey (West Country Down).

Third of £5, to George Adney, of Harley, Much Wenlock (Shropshire Down).

Highly commended.—Thomas Horton (Shropshire Down), John Bryan, for three (Oxford Down) rams; and William Humfrey, for another (West Country Down) ram.

The class generally commended.

Pens of five Shearling Ewes, of the same flock.

First prize of £20, to William Humfrey (West Country Down).

Second of £10, to Stephen King, of Old Hayward Farm, Hungerford (West Country Down).

Third of £5, to William Browne Canning, of Chisleton, Swindon (Hampshire Down).

Highly commended.—William Humfrey (West Country Down), Thomas Edmond Miller (Oxford Down), James and Edward Crane (Shropshire Down), John W. Brown (Hampshire Down), William F. Bennett (Hampshire Down), John Moore (Hampshire Down).

The class generally commended.

PIGS.

JUDGES.—Rev. C. T. James, Ashley, Devon.

J. S. Turner, Chyngton, Seaford.

J. Woolf, Haslington Hall, Crewe.

Boars of a large breed.

First prize of £10, to John Harrison, jun., of Heaton Norris, Stockport (white, with spots).

Second of £5, to John Woodcock, of Netherhampton, Salisbury (Berkshire).

Third of £3, to Michael Gavins, of the Fox Inn, Woodhouse Carr, Leeds (Yorkshire).

Highly commended.—Captain Curtis (white).

Boars of a Small Breed.

First prize of £10 to His Royal Highness the Prince Consort (white).

Second of £5, to John Harrison, jun. (white, with spots).

Third of £3, to John Holdway, of Weston, Bath (Essex).

The Class generally Commended.

Breeding Sows of a Large Breed.

First prize of £10 to Sir R. G. Throgmorton, Bart., of Buckland, Farringdon (Berkshire).

Second of £5, to William B. Wainman, of Carhead, Cross Hills, York (white).

Third of £3, to John Woodcock (Berkshire).

Highly commended.—John Harrison, jun. (white), John Spencer (Berkshire).

Breeding Sows of a small breed.

First prize of £10, to Thomas Crisp, of Butley Abbey, Wickham Market (black).

Second of £5, to George Turner, of Barton, Exeter (improved Essex).

Third of £3, to Thomas Crisp (black).

The Class generally Highly Commended.

Pens of three breeding Sow-Pigs of a large breed, of the same litter, above four and under eight months old.

First prize of £10, to George B. Morland, of Chilton Farm, Harwell (black and white).

Second of £5, to William James Sadler, of Benthum Calcutt, Cricklade (Berkshire).

Highly commended.—William Hewer (Berkshire), Edward Bowly (Berkshire).

Commended.—William Hewer (Berkshire).

Pens of three Breeding Sow-Pigs of a Small Breed, of the same litter, above four and under eight months old.

First prize of £10, to His Royal Highness the Prince Consort (white).

Second of £5, to Robert H. Watson, of Bolton Park, Wigtown, Cumberland (white).

SPECIAL PRIZES.

GIVEN BY THE WARWICK LOCAL COMMITTEE.

CATTLE BEST ADAPTED FOR DAIRY PURPOSES.

JUDGES.—J. Clayden.

J. Parkinson.

J. B. Thompson.

Bulls of any pure breed, calved on or after the 1st January, 1858, and not less than 12 months old on the 1st July, 1859.

First prize of £20, to Henry Ambler, of Watkinson Hall Farm, Halifax (Shorthorn, Royal Turk).

Second of £10, to John Kay Farnworth, of The Oak Farm, Alderley Edge, Chorley, Cheshire (Shorthorn, Earl Bertram).

Third of £5, to Lord Feversham, of Duncombe Park, Helmsley, York (Shorthorn, Vice-Chancellor).

Highly commended.—Joseph Heaward (Shorthorn, Young Champion).

Commended.—The Rev. Charles William Holbeck (Shorthorn, The Duke), James H. Langston, M.P., (Shorthorn, Prince Frederick).

Pairs of Cows (without restriction as to breed), in milk or in calf.

First prize of £20, to J. H. Langston, M.P., of Saraden House, Chipping Norton (Shorthorns, Dairy Maid and Red Cherry).

Second of £10, to The Hon. Col. Pennant, of Peurhyn Castle (Shorthorns, Buttercup and The Vine).

Third of £5, to Edmund Lythall, of Radford Hall, Leamington (Shorthorns, Trafford and Nonpareil).

Highly commended.—Henry Ambler (Shorthorns), Joshua Price (Shorthorns).

Commended.—Henry Rawlins (Shorthorns), Edward Bowly (Shorthorns).

Pairs of Heifers, of a pure breed, in milk or in calf, under three years old.

First prize of £20, to Joshua Price, of Featherstone, Wolverhampton (Shorthorns, Strawberry and Queen Anne).

Second of £10, to John Hutt, of Water Eaton, Oxford (Shorthorns, Orange Blossom and Laurestinus).

Third of £5, to John King Tombs, of Langford, Lechlade (Shorthorns, Flounce and Milkmaid).

Highly commended.—John Lane (Shorthorns), J. H. Langston, M.P. (Shorthorns).

Commended.—John Hutt (Shorthorns), William Woodward (Shorthorns).

Pairs of Yearling Heifers, of a pure breed.

First prize of £20, to Henry Ambler (Shorthorns, Lady Floreance and Lady Blanche).

Second of £10 to Col. Pennant, M.P. (Shorthorns, Phantasy and La Cantatrice).

Third of £5, to William Fletcher, of Radmanthwaite, (Shorthorns, Minnie and Juliet).

Highly commended.—Richard Stratton (Shorthorns).

LONG-HORNS.

JUDGES.—J. Clayden.

J. Parkinson.

J. B. Thompson.

Bulls of the pure Long-horn breed.

First prize of £10, to Josh. Holland Burbery, of The Chase, Kesilworth.

Second of £5, to Michael Taverner, of Upton, Nuneaton (Admiral).

Commended.—Richard Hawkes.

Pairs of Cows of the pure Long-horn breed.

First prize of £10, to Lieut.-Col. Inge, of Thorpe (Dowager and Simple).

Second of £5, to John Godfrey, of Wigaton Parva, Nuneaton (Lady and Beauty).

Highly commended.—E. T. Twycross.

Commended.—E. T. Twycross, and J. H. Burbery.

SHROPSHIRE SHEEP.

JUDGES.—J. Blundell.

J. Burgess.

J. Rawlence.

Shearling Rams.

First prize of £20, to John Coxon, of Freeford Farm, Lichfield.

Second of £10, to Henry Sheldon, of Brail's House, Shipston-on-Stour.

Third of £5, to Thomas Horley, jun., of The Foase, Leamington.

Highly commended.—James and Edward Crane, and John Coxon.

Commended.—Thomas Mansell, and Pryce William Bowen.

Rams of any other age.

First prize of £20, to Mrs. Baker, of Grendon, Atherstone.

Second of £10, to James and Edward Crane, of Shrawardine, Shrewsbury.

Third of £5, to George Adney, of Harley, Much Wenlock.

Highly commended.—Thomas Horley, jun., J. Coxon and C. W. Thacker, and the Earl of Dartmouth.

The class generally commended.

Pens of Five Theaves.

First prize of £15, to Edward Holland, of Dumbleton Hall.

Second of £5, to James and Edward Crane.

Highly commended.—Thomas Horley, jun.

The class generally commended.

HORSES.

FOR AGRICULTURAL PURPOSES.

JUDGES.—J. Morley.

C. Randall.

W. C. Spooner.

N.B.—The Stallions (excepting the Ponies) must have served or shall serve for at least one season in the counties of Warwick, Oxford Northampton, or Berks.

Stallions for agricultural purposes, foaled before the 1st of January, 1857.

First prize of £20, to John Manning, of Orlingbury, Wellesborough (Shire, Sampson).

Second of £10, to Robert Spencer, of Shuckburgh Lodge, Daventry (Shire, Carlisle).

Commended.—James Morrell, Thomas Baldwin, and Joseph Ball.

Stallions for agricultural purposes, foaled in 1857.

First prize of £15, to William Buller, of Hanwell Fields, Banbury (Shire, Conqueror).

Second of £5, to Thomas Crisp, of Butley Abbey (Suffolk).

Commended.—William Wynne.

Pairs of agricultural Horses, Mares, or Geldings.

First prize of £10, to John Gay Attwater, of Hallingwood Farm, Cubberley, Cheltenham (West of England).

Second of £5, to John Beasley, of Chapel Brampton, Northampton (Suffolk).

Highly commended.—C. B. and J. W. Robinson.

Commended.—James Dormer.

One year old Fillies or Geldings for agricultural purposes.

The prize of £10, to William Lowrie, of Cadoxton, Cardiff.

RIDING HORSES.

JUDGES.—J. H. Bland.

T. Brooks.

H. Thurnall.

Mares or Geldings, of four years old and upwards, for hunting purposes.

First prize of £20, to Walter Coleman, of Kingsbury Hall, Tamworth, Warwick (four years old, by Drayton, dam by Steamer).

Second of £10, to Lord Berners, of Keythorpe Hall, Leicester (Barbara, by Sportsman, dam by Rubens).

Highly commended.—John B. Booth, J. T. Arkwright, and R. F. Formby.

The class generally commended.

Stallion Ponies, not exceeding fourteen hands high.

First prize of £10, to Sir Pyers Mostyn, Bart., of Talacre, Rhyl, Flintshire (Welsh, Young Bantam).

Second of £5, to James Cresswell Wall, of Redland Lodge, Bristol (Welsh, Jack).

Highly commended.—Denis Sullivan, and James Cresswell Wall.

The class generally commended.

PIGS.

JUDGES.—Rev. C. T. James.

J. S. Turner.

J. Woolf.

Berkshire Boars.

First prize of £10, to William Hewer.

Second of £5, to Edward Bowler, of Siddington House, Cirencester.

The class generally highly commended.

Berkshire Sows.

First prize of £10, to William Hewer.

Second of £5, to William James Sadler, of Bentham Calcutt, Cricklade.

The class generally highly commended.

Best pens of Five breeding Pigs, of the Berkshire breed, of the same litter, not less than three nor more than five months old on the 1st July 1859.

First prize of £15, to Joseph Smith, of Henley-in-Arden, Warwick.

Second of £10, to Joseph Smith.

The class generally highly commended.

Pens of Five breeding Pigs, of any other large breed, of the same litter, not less than three nor more than five months old on the 1st July 1859.

First prize of £15, to William B. Wainman, of Carhead, Cross Hills, York (White).

Pens of Five breeding Pigs, of a small breed, of the same litter, not less than three nor more than five months old on the 1st July 1859.

First prize of £15, to the Hon. Col. Pennant (White).

Second of £10, to Robert H. Watson, of Bolton Park (White).

The class generally commended.

STEWARDS OF STOCK.

Mr. Robert Smith, Emmett's Grange, South Molton.

Mr. Milward, Thurgarton Priory, Southwell, Notts.

Mr. W. Fisher Hobbs, Boxted Lodge, Colchester.

VETERINARY INSPECTORS.

J. B. Simonds, London.

J. Hunt, Birmingham.

PRIZES FOR IMPLEMENTS.

PLOUGHS.

JUDGES.—J. Brannett, Hillborough, Norfolk

J. J. Rawley, Kewthorne, Chesterfield.

CONSULTING ENGINEER.—Amos, Jun., Southwark.

FOR LIGHT LAND.

First prize of £4, Hornsby and Sons, Grantham.

Second of £3, Ransomes and Sims, Ipswich.

Third of £2, J. & F. Howard, Bedford.

Fourth of £1, Hensman & Son, Leighton Buzzard.

TURNWREST.

Prize of £2, John Eddy, Kentford.

FOR GENERAL PURPOSES.

First prize of £6, J. & F. Howard, Bedford.

Second of £5, Hornaby & Sons, Spittlegate.

Third of £4, Ransomes & Sims, Ipswich.

Fourth of £2, Busby Agricultural Implement Company, Newton-le-Willows.

Fifth of £1, Hensman & Son, Leighton Buzzard.

FOR HEAVY LAND.

First prize of £3, Hornaby & Sons, Spittlegate.

Second of £2 each, J. & F. Howard, Bedford; and Ransomes and Sims, Ipswich.

Third of £1 10s. each, W. Ball, Rothwell; and the Busby Agricultural Implement Company, Newton-le-Willows.

HIGHLY COMMENDED.

Busby Agricultural Implement Company, Newton-le-Willows, for light land plough.

William Ball, Rothwell, for light land plough.

Edward Page & Co., Bedford, for light land plough.

Ransomes & Sims, Ipswich, for turnwrest plough.

W. Ball, Rothwell, for general purpose plough.

HARROWS, ROLLERS, AND CLOD CRUSHERS.

JUDGES.—J. Hicken, Bourton, Rugby.

G. Hipwell, Cheam, Surrey.

HARROWS FOR LIGHT LAND.

First prize of £4, J. & F. Howard, Bedford.

Second of £3, J. & F. Howard, Bedford.

Third of £2, Page & Co., Bedford.

CHAIN HARROWS.

Prize of £2, Mapplebeck & Lowe, Birmingham.

HARROWS FOR HEAVY LAND.

First prize of £4, J. & F. Howard, Bedford.

Second of £3, Page & Co., Bedford.

Third of £2, Ransomes & Sims, Ipswich.

HIGHLY COMMENDED.

E. H. Bental, Heybridge, for harrows for heavy land.

Ransomes & Sims, Ipswich, for harrows for light land.

John Cartwright, Shrewsbury, for chain harrows.

ROLLERS.

First prize of £5, Trustees of William Crosskill, Beverley, for field roller.

Second of £3, Hill & Smith, Dudley, for field roller.

Third of £2, Hill & Smith, Dudley, for field roller.

CLOD CRUSHERS.

First prize of £5, A. & E. Crosskill, Beverley, for clod-crusher.

Second of £3, W. Cambridge, Bristol, for clod-crusher.

Third of £2, Trustees of W. Crosskill, Beverley, for clod-crusher.

STEAM PLOUGHS AND CULTIVATORS.

JUDGES.—J. Druce, Eynsham, Oxon.

J. Thompson, Badminton.

CONSULTING ENGINEER.—W. Owen, Rotherham.

STEAM PLOUGH.

Prize of £50, John Fowler, jun., Cornhill, London, for set of steam-cultivating apparatus and balance four-furrow plough.

HIGHLY COMMENDED.

John Fowler, jun., Cornhill, London, for set of steam-cultivating apparatus.

John Fowler, jun., Cornhill, London, for balance three-furrow plough fitted with scarifier irons.

CULTIVATORS FOR LIGHT LAND.

First prize of £5, E. H. Bental, Heybridge.

Second of £3, Coleman & Son, Chelmsford.

Third of £2, Clay, Walton.

CULTIVATORS FOR HEAVY LAND.

First prize of £5, Coleman & Son, Chelmsford.

Second of £3, Bental, Ipswich.

Third of £2, Ransomes & Sims, Ipswich.

BRICK AND TILE-MACHINES AND MISCELLANIES.

JUDGES.—J. Clark, Long Sutton.

W. Tindal, Wheatley, Doncaster.

CONSULTING ENGINEER.—C. E. Amos, Southwark.

Local prize of £10, Loomes & Co., Whittlesea, for three sets of draining pipes.

Prize of £8, Thomas Scragg, Calveley, for hand-power tile machine.

Prize of £2, John Whitehead, Preston, for hand tile machine.

Prize of £15, A. & W. Eddington, Chemsford, for draining plough and windlass.

First prize of £3, Francis Parkes & Co., Sutton Coldfield, for bundle of draining tools.

Second of £2, Mapplebeck & Lowe, Birmingham, for bundle of draining tools.

First prize of £10, John Whitehead, Preston, for brick and tile machine.

Second of £5, Humphrey Chamberlain, Kempsey, for brick and tile machine.

Local prize of £10, William Torr, Grimsby, for field gate.

SILVER MEDALS.

Sidney Flavel & Co., Leamington, for a kitchen range.

Thomas Gibbs & Co., Piccadilly, London, for a collection of agricultural plants, seeds, and grain.

Peter Lawson & Son, Westminster, for a collection of plants, seeds, and grain.

W. H. & George Dawes, Barnsley, for patent atmospheric hammer.

Humphrey Chamberlain, Kempsey, for a dry-clay brick-making machine.

Humphrey Chamberlain, Kempsey, for a plastic-clay brick-making machine.

Burgess & Key, Newgate-street, London, for a grass mowing machine.

Messrs. Druce and Thompson were the Judges of Mowing Machines.

HIGHLY COMMENDED.

Holmes & Sons, Norwich, for a new portable saw-bench.

Henry Bridges, Oxford-street, London, for variety of improved butter prints.

John Cartwright, Shrewsbury, for clod-crushers.

Holmes & Son, Norwich, for rollers on light land.

COMMENDED.

B. Goulding, Leicester, for light land plough.

Thomas Johnson & Sons, Leicester, for a collection of garden seats, ornamental vases, &c.

James Woods & Sons, Stowmarket, for cabinet mangle.

John Warner & Sons, Jewin-street, London, for a collection of hydraulic machinery.

Priest & Woolnough, Kingston-on-Thames, for turnip duster and fly-destroyer.

Mapplebeck & Lowe, Birmingham, for collection of articles.

Hill & Smith, Dudley, for their collection, particularly of gates and fence.

Francis Morton, James-street, Liverpool, for wire-strainer and fencing apparatus.

Thomas Scragg, Calveley, for three sets of draining pipes.

John Robinson, Nuneaton, for three sets of draining pipes.

John Whitehead, Preston, for hand draining tile and brick machine.

Benjamin Fowler, Whitefriars-street, London, for pump foot-piece valve.

Burgess & Key, Newgate-street, London, for revolving brushes for destroying insects.

Robert Maynard, Whittleford, for dibbling machine.

A. & E. Crosskill, Beverley, for an improvement in discharging liquid manure.

S. & E. Ransomes, Ipswich, for Argand fire bars.

Perry & Son, Bilston, for exhibition of iron gates, fences, trays, and other articles.

Trustees of William Crosskill, Beverley, for show of carts, carriages, wheels, &c.

Benjamin Heel, Warwick, for cooperage.

Peyton & Clark, Birmingham, for assortment of tools.

The St. Pancras Iron Works, Pancras-road, London, for stable fittings and general collection.

Barrett, Exall, and Andrewes, Reading, for show of machines.

William Roberts, Northampton, for a collection of ornamental chairs and other articles.

James Comins, Southmolton, for harrows for light land.

Page & Co., Bedford, harrows for heavy land.

Hugh Carson, Warminster, for cultivator for light land.

Woods & Son, Stowmarket, for roller for light land.

Coleman & Son, Chelmsford, for clod-crusher.

William C. Cambridge, Bristol, for chain harrows.

STEWARDS OF IMPLEMENTS.

Mr. Barnett, Stratton Park, Biggleswade.
 Mr. H. B. Caldwell, Lackham House, Chippenham.
 Mr. Edward Pope, Great Toller, Newton, Dorset.

PRIZES FOR CHEESE.

JUDGE.—James Watson, Birmingham.

CHAMPION PRIZE OF £30

Four cheeses, not less than 34lbs. weight each, entered in any of the classes.

The prize to John M. Baker, of Dordon Hall, Atherstone, Warwick.

COLOURED CHEESES made in 1858.

Four coloured cheeses not less than 35lbs. weight each.
 Prize of £20, John A. Beale, of Brockhurst, Lutetworth.

UNCOLOURED CHEESES made in 1858.

Four uncoloured cheeses not less than 35lbs. weight each.
 First prize of £20, Thomas Haddon, Hampton Lucy, Warwick.

Second of £15 withheld for want of sufficient merit.

COLOURED CHEESES made in 1859.

Four coloured cheeses not less than 25lbs. and under 35lbs. weight each.

First prize of £15, George Thomas Spokes, Little Lawford, Rugby Warwick.

Second of £10, Thomas Satchwell, Hernfield House, Knowle, Birmingham.

UNCOLOURED CHEESES.

Four uncoloured cheeses not less than 25lbs. and under 35lbs. weight each.

First prize of £15, and second of £10, withheld for want of sufficient merit.

PRIZES FOR WOOL.

JUDGES.—Thomas Clayton.

H. B. Hughes.

SIX FLEECES OF LEICESTER WOOL.

The prize of £10, George Reading, Priors Hardwick, Stockton, Rugby.

SIX FLEECES OF SOUTHDOWN WOOL.

The prize of £10, the Duke of Richmond, Goodwood, Chichester.

SIX FLEECES OF GLOUCESTER WOOL.

The prize of £10, Samuel Pratt, Bubbenthal, Kenilworth, Warwick.

SIX FLEECES OF SHROPSHIRE OR MIXED WOOL.

The prize of £10, Thomas Horton, Harnage Grange, Shrewsbury, Salop.

STEWARD OF CHEESE AND WOOL.

Mr. Pain, Laverstock Hill, Salisbury.

DIRECTOR OF THE SHOW AND GENERAL ARRANGEMENTS.

Mr. B. T. Brandreth Gibbs, Half-moon Street, Piccadilly, London.

THE GENERAL MEETING

was held at the Shire Hall on the Friday morning, July 15, at ten o'clock; Lord Walsingham, the President elect, in the chair. There were also present—Lord Bernal, Lord Leigh (Lord Lieutenant of Warwickshire), Sir W. W. Wynn, Rev. C. T. James, Messrs. Humberstone, M.P., Barnett, Caldwell, Pope, Fisher Hobbs, Professor Simonds, Jonas Webb, B. T. Gibbs, J. Shuttleworth, G. P. Tuxford, S. Sidney, R. Smith, N. G. Barthropp, H. Corbet, R. Milward, C. Wren Hoskyns, S. Skelton, H. Thurnall, J. Claydon, J. Odams, J. Pain (Salisbury), S. Druce, H. Manning, James Howard, Howard Reed, H. Middleton, J. Moore, R. L. Hunt, C.E., Amos, C.E., R. Westbrook Baker, Ryder, Aldershow, Manley, Cohen, Lowe, &c.

Lord WALSINGHAM had received a letter from the Duke of Marlborough, excusing himself on the ground of being chairman of a committee of the House of Lords, a meeting of which he had to go up to town to attend, and which would prevent his attendance at the annual meeting of the Society.

Mr. SIDNEY complained there were not more practical men in the Council, and that the important open meetings were held at times that operated least to the benefit of the Society. With respect to the weekly meetings held on Wednesdays, no notice was given of them, the reporters were not

admitted, and the reports were frequently not made public until twelve or fifteen months after the proceedings. Then the annual meetings were held on a Friday, when a large number of persons had left the town where they were held, and when there could not be sufficient discussion of anything of importance. He further complained of the constitution of the Council. It was composed of twenty-one peers, twenty-nine sons of peers, baronets, or county members, twelve squires, five lawyers—not yet arrived at the dignity of squires, though they might possibly do so—four engineers and implement-makers, one hon. director, twelve breeders or stockholders, and two mayors. He adverted to the deficiency of £2,000, and complained that the Finance Committee were unwilling to afford proper information. He could hardly understand the extraordinary course adopted by the Council in proposing a vote of thanks to gentlemen who not only took upon themselves the office of Finance Committee, but rejected any interference on the part of members of the Society, and, still, so neglected their duties that they were finally compelled to resign. A loss like that to which he had referred might have occurred in the common order of things, but it was absurd to suppose that when any subscriber simply ventured to make a suggestion, such suggestion should be treated as an impertinence. The late Finance Committee had practically monopolised all the management of two parts of the Society. When he went to the internal management, he found there just about the same number of subscribers as when the Society was established twenty years ago. Since that time the farming interest had been doubled and trebled, and farmers themselves had increased in intelligence, but the number of subscribers had not increased. Why were there not more members in the Society? Those active steps and pains were not taken that should be taken. Figures spoke much stronger than words. It should not be forgotten that the Council should be representative: men grew old, and if the same members remained in it without the infusion of new blood, its vigour failed. They did not find the practical farmers in the Council, and why not? It was not in consequence of any opposition raised by the noblemen who honoured the Society by their countenance, but just for the reason he had mentioned. The affairs of the Society were monopolised by an exclusive clique—men actuated by an exclusive love of power excluded other persons whose assistance would be of great benefit. Some gentlemen might think that was very strong language—very personal; but, when they had just lost £2,000, the matter ran beyond the ordinary reins. He did not make use of any language that was not strictly admissible. The question was not as to what the Society had done, but as to its ability to have done a great deal more than it had done. The gentlemen who served them as Stewards didn't rise to be Vice-presidents. A man must be of a certain class. He would not mention names. But they had only to look to the Finance Committee, who certainly could not have been chosen for their skill in agriculture, for their literary ability, or even their social position. Gentlemen had turned round and said, that farmers who might be induced to join that association would not attend to its duties. No assertion was more unfounded. The Central Farmers' Club had produced papers on agriculture which had quite as much effect as any paper in the *Journal* of the Society. That class was open to choose from; and it was well known how well a comparatively small committee there attended to their duties. The Wednesday's meetings should have greater publicity. He believed that, as men worked the harder for a little fame, they would get many papers from practical men, if they could be communicated to the world. There was another point to which he would refer. He believed the time had arrived when an inquiry should be made as to what had been the progress in the several departments, of implements, stock, and cultivation. They might get answers to those inquiries simultaneously, and then a report should be published as to what had been the progress since the Society was founded in 1839 till now. He was no puller down. He only wanted to see the Society worthy of its position. As possessing to some extent the confidence of the agricultural world, as a writer of some little merit, and as a sincere observer, he considered that he possessed claims to be heard.

Lord BERNERS proposed a vote of thanks to their friends at Warwick for the assistance they had rendered the Society during the Show; which Sir WATKIN WYNN seconded.

Lord LEIGH proposed that the best thanks of the meeting

be given to the Railway Companies. He could speak personally of the very kind attention which the Companies had paid to any request which had been made to them; and he felt quite sure that the proposition he had made would be carried unanimously.

Mr. CHANDOS WREN HOSKYNs had very great pleasure in seconding the proposition. In these days, the railways had become a valuable arm in the assistance of the development of agriculture. He could hardly state a more self-evident proposition than that the great exhibitions of that Society could not take place but for the railways. (Hear, hear.) At that moment, when any competition arose as to the locality for holding the Society's Show, the first question that arose was as to the railway accommodation. Such a county as that of Hereford only required an increase of railway accommodation to become a most interesting locality, with its hop grounds and other attributes, for a meeting of that Society. He did think that a grateful recognition of their services was pre-eminently due to the liberality and ready and earnest aid which the Society had received from the Railway Companies.

Mr. LOWE, in reference to the railways, complained that no extra trains had been put on for the working-classes. The full fare had been demanded for conveyance of mechanics from the immense district of Birmingham. The excuse which he understood was given, was that the two Companies had an understanding not to run two excursions in one week. That, in his opinion, was a very extraordinary excuse, and he believed the town of Birmingham was much displeased at the conduct of the Companies in the matter he had referred to.

The resolution for a vote of thanks to the Railway Companies was then carried, two or three hands being held up against it, and about four for it.

Mr. HUMBERSTONE proposed that the best thanks of the meeting be given to Lord Leigh, and the gentlemen composing the members of the Local Committee at Warwick and neighbourhood, for the assistance they had rendered. He would simply remind the meeting of the liberality with which those gentlemen came forward to assist the operations of the Society at Warwick, and of the long list of handsome local prizes, which had been so well represented in the show-yard. They had further provided a trial ground, and a most admirable situation—one of the best, perhaps, that they had ever had. In short, those gentlemen, he was sure, had rendered all the assistance they possibly could, in carrying out the great exhibition of 1859. Speaking of the Society generally, he must say that he hoped they were progressing in regard to their external Show very satisfactorily. The Show this year was certainly a very admirable one, and, he believed in particular, that of implements had exceeded the Show of any previous year. He hoped that the results here, as in every other district where the Society had been, would be a great trade—he might call it—for the sale of agricultural implements. That invariable result of itself showed the great stimulus which the meetings of that Society gave to agriculture. With regard to another subject which had been alluded to, namely, the internal management of the Society, he did think that was a subject quite worthy of their attention, and the suggestion was by no means a bad one, of taking advantage of the opportunity that might be afforded to them by the recess of directing their attention to the subject.

Mr. MILWARD seconded the vote of thanks to the Warwick Committee, and Lord LEIGH replied. He felt that he was almost presumptuous in doing so, inasmuch as the labour of the Local Committee had not fallen upon him to the degree in which it had upon others. Upon Messrs. Moore and Margetts, the Honorary Secretaries, he could safely say, as a member of that committee, that the success of the meeting—as far as Warwick was concerned—had mainly rested; and to them was due the praise.

Mr. JONAS WEBB proposed, and Mr. SIDNEY seconded, a vote of thanks to the Duke of Marlborough, the President of last year.

Mr. C. BARNETT had much pleasure in expressing his own cordial thanks, and those of the meeting, to those gentlemen who had taken upon themselves, on that occasion, the very onerous duty of judges. They ought to be very thankful in having obtained the services of such men as the Judges of the Show to perform that office; and to those gentlemen the best thanks of the meeting were due. He would not detain them for many minutes; but, being upon his legs, he would refer to one subject. It was not his intention to follow Mr.

Sidney through his speech; but, as an old member of the Council, he did think it right for him to say that some of the suggestions which Mr. Sidney had made should have his consideration: and if, upon mature reflection, he thought the Society would in any way be benefited by any of those suggestions being carried out, he should endeavour to bring them before the Council.

Mr. ROBERT SMITH, Steward, seconded the vote of thanks to the Judges. He took that opportunity of saying that no person could value their services so much as the men who worked with them in the capacity of Stewards of the Yard. If persons were only to see the pains which the Judges took to arrive at a correct result—having the animals led out and back again, making their minutes in their note-books—he was sure that less would have been said by the observers, when they went round the yard, than had been said on that occasion.

Mr. W. FISHER HOBBS had never before seen gentlemen take such trouble in the award of their prizes as on the present occasion; and that, if the Judges had failed in giving satisfaction, it was not their fault.

Mr. CLAYDEN, as acting in the capacity of one of the Judges, begged to return his thanks for the compliment the meeting had passed to the Judges. It was too much to suppose that the Judges could on every occasion give universal satisfaction; but he could assure the meeting that his endeavour had been to discharge his duty faithfully, doing justice to each competitor. The duty of a Judge, as they were aware, was a most onerous one. He could say that those present, with whom he had had the honour of acting, had endeavoured faithfully to discharge their duties; and he believed the same remark would apply to the Judges in the other departments. He begged to congratulate the Society on the present Show: it was a most splendid one.

At this point the Rev. C. JAMES was also called for. He must congratulate the meeting on the description of stock which had been exhibited at the show of 1859. It appeared to him that they had more of the true types of cattle, animals which were wanted to exhibit as models of the various kinds. It appeared to him that they were freer from the coarse offal than at any exhibition of the Society which he had witnessed. He could especially congratulate the Society on what to him was a most significant fact, the increased attention, inquiry, and intelligence which the young men, the sons of farmers, exhibited in discovering the principles of the implements to which prizes were awarded, and in their examination of the stock shown to them as models. With respect to another subject in reference to that Society, he trusted that bye-gones would be bye-gones; and he only hoped that no district in England would be unrepresented in the Council—that was a most important feature to be effected. Standing as they did, geographically, in the very centre of England, comprising in this country a great mechanical emporium, it was deeply regretted that that body of mechanics had not been enabled to have witnessed the implement department of that show. It was to be lamented on this account, that the improvement in machinery, mechanism, the sciences and arts, rendered an increased education of the working classes necessary.

Mr. PAIN said that a speech had been presented to their notice by Mr. Sidney—a speech which was annually contributed to that meeting, and which, he was sure, was always received with that deference to which that gentleman was entitled. He had very properly alluded to the Council of the Society, and he had made an observation which he (Mr. Pain) thought he was called upon to notice. He had suggested that the Council was constituted of noblemen, of some practical farmers, and of two mayors (laughter). He (Mr. Pain) had the honour of being considered as one of those mayors. He had the honour, in his humble way, of entertaining the Society at Salisbury; and he did it to the best of his ability. (Hear, hear.) It might also be said that similar kindness and attention was contributed by the Mayor of Chester. One of the Society's oldest members, and ablest men belonging to the Society, did think proper to remark in a jocular manner that no persons were so entitled to take the distinction awarded to the best "mares" for agricultural purposes as the Mayors of Chester and Salisbury. (Loud laughter.) He (Mr. Pain) was very much obliged to Mr. Sidney for condescending to notice him as a Mayor. (Renewed laughter.) He was elected in 1857 a member of the Council, in compliment to Salisbury. He naturally retired when his term expired, but had the honour of being re-elected. And he must say in defence of himself and

the Mayor of Chester—that although Mayors then they were not so now. They endeavoured, as members of that Council, to do their duty. It did not signify to him whether he was considered merely as Mayor or member of the Council—he performed the duty as a member, as an independent man—he denied that he was a member of any clique (Hear). He repeated he did his duty, and when the Council said otherwise he would resign his position. He believed his worthy friend, the late Mayor of Chester, would do his duty in the same way (cheers). Lord Leigh did not see why a Mayor of a town should not be conversant with agriculture. He knew for a fact that one of the best agriculturists of this county had been thrice elected Mayor of Warwick.

Lord BERNERS then proposed a vote of thanks to the noble Chairman. He congratulated the meeting that in the noble lord who occupied the chair they had one practically acquainted with all the departments of agriculture.

The proposition was seconded by Mr. Pain, and Lord Walsingham returned thanks. He thought that, from the observations he had heard in the yard, he might congratulate the members of the Society on having had a most capital meeting. It was one of the best meetings they had had, both as regards implements and stock exhibited, and the attendance. He felt sure that Mr. Sidney must be gratified by the observations which his speech had elicited. Those observations showed that on the part of the members present, there was no unwillingness to listen to any suggestion which was made for the general benefit of the Royal Society. With respect to one observation as to the want of a sufficient number of practical men in the Council—he had always observed, since he had belonged to the Council, that there had ever been a strong wish to obtain the services of practical men. When the name of a practical farmer was brought before the Council, there had never been any unwillingness to elect him to the Council. There were several practical men members of the Council. The Council was by no means destitute of information

to be obtained from such men, and he was sure any suggestion from them would ever receive the best consideration of the Council.

Mr. MILWARD then proposed a vote of thanks to Mr. Gibbs. He would remind the meeting that for a considerable time Mr. Gibbs had been rendering great assistance to the Society. In other meetings, Mr. Gibbs had rendered great service as Honorary Director of the Show; but this year, owing to an unfortunate circumstance, he had been for weeks doing the whole business of the Society. He (Mr. Milward) was quite sure that the meeting would agree with him in thanking Mr. Gibbs most cordially for the duties he had performed.

Mr. CALDWELL seconded the proposition. Without Mr. Gibbs he did not know what the Judges and Stewards would have done. With regard to getting practical farmers in the Council, he could assure them that it had been his constant and earnest endeavour to do so, and at many agricultural meetings he had mooted the desirability of it; but the farmers say the distances are so great they cannot leave their businesses. Further, out of a list of fifty or sixty names of judges they obtained so small a number that the Stewards were frightened to death lest the work should not be done. And, if the same excuse were made by practical farmers to undertake other duties, as undertaking those of judges—he must say that a great difficulty would be found in getting them to act.

Mr. GIBBS was extremely obliged for the vote of thanks. An emergency suddenly arose, at a time of year when he was able to devote some of his unemployed time to the Society's service. Having taken deep interest in the Society for twenty-one years, he felt that he should not have been doing his duty if he had shrunk from coming forward on that occasion. He had, therefore, placed his services humbly at the disposal of the Society as honorary director of the show and secretary; and if he had succeeded in his endeavours he was fully repaid.

THE EXHIBITION AND TRIAL OF IMPLEMENTS.

There is no section of the Royal Agricultural Society's show which has obtained such a hold upon the public mind as the implement department. It has gone on and progressed so rapidly from year to year, and to such a degree, that it has now become, perhaps, the most attractive and interesting feature of the meetings. It is also one of very great importance, inasmuch as the Society has now mainly devolved upon it the responsibility of the trial and proof of the practical value of the various implements exhibited—some other societies having given up the prize system for agricultural implements. This certainly imposes a very onerous duty upon the Royal Society and the officers and judges engaged, and we know from experience that notwithstanding every effort, it is not always that a series of satisfactory trials can be conducted. There are so many contingencies to meet at the time, so many little matters which cannot be foreseen by the most sagacious steward or, it may be, the most careful exhibitor, which have to be provided for. Moreover, the judges' views and requirements vary, and are often contrary to the expectations and provisions made for the various trials. They require the implement under trial to be shown and necessarily tested under its several phases, which mostly have to be provided for at the moment, and often cause great delay, so that the actual time devoted to the trial is frequently very limited. Not that a competent judge would or ought to require any lengthened period for examination; it is only required to have the implement rightly adjusted and properly set to work in an appropriate and suitable manner. The decision is then soon arrived at. Another marked feature of the implement show is that it has become a very extensive and inviting emporium or mart, and a vast amount of business in the sale of implements and machinery is transacted. The subjoined tabular statement will tend to show the desire manifested by influential manu-

facturers to take advantage of the Society's shows:—

ARTICLES EXHIBITED.	Lincoln, 1854.	Carlisle, 1855.	Chelmsford, 1856.	Salisbury, 1857.	Chester, 1858.	Warwick, 1859.
Number of Exhibitors } and in Articles as below }	130	118	147	154	193	236
Steam ploughs or cultivators	24	4	6	8	13	16
Steam engines	28	18	31	28	43	121
Steam traction engines	..	1	1	4	2	5
Drills	30	14	18	23	47	108
Manure distributors	9	3	5	13	11	7
Horse hoes	21	10	24	26	34	67
Hay machines	4	6	10	11	12	16
Horse rakes	14	8	17	22	24	44
Reaping- and mowing } machines	12	9	5	12	..	15
Carts and waggons	28	14	33	34	28	72
Ploughs	27	19	23	26	40	225
Subsoilers	17	8	10	8	12	32
Cultivators, &c.	25	23	28	20	15	92
Clodcrushers and rollers	24	17	25	18	24	115
Harrows	16	9	17	19	32	108
Draining tools, &c.	4	1	8	7	8	43
Thrashing machines	26	21	33	31	..	73
Corn-dressing machines	24	18	31	31	29	61
Chaff-cutters	33	22	46	37	53	168
Linseed crushers or mills	20	14	25	15	22	41
Turnip-cutters, &c.	18	20	32	30	27	58
Oilcake breakers	20	12	23	16	32	54
Churns	12	7	10	10	20	92
Brick and tile machines	11	7	9	5	6	25
Mills	..	..	..	..	..	40
Bone mills	2	..	2	..	7	9
Cheese-making apparatus	..	..	..	..	5	16
Cheese presses	4	5	5	..	22	22
Root pulpers	..	..	..	..	28	63
Screening machines	3	..	..	..	16	15

It will be as well to first notice those implements that were selected for trial. Beginning with the

PLOUGHS,

which must be considered under three heads—light, general purpose, and heavy land ploughs.

In the light-land class there were 15 entries for trial. On running through them previously, we did not notice much originality. A new principle, or to speak more properly, a revived principle, was noticeable in Messrs. Hornsby's plough, consisting in a convexity of the breast. It certainly made good, very good work, having a capital harrow edge. It is light, and well made, with nicely-adjusted wheel fastenings. Messrs. Ransomes' struck us as the best ever seen of their make; but the wheel fastenings are very slight. The arrangement for the adjustable lever neck is decidedly clever; the work regular and good throughout; square furrow-sole. Messrs. J. and F. Howard competed with a plough, as usual well got up, into which a few improvements in detail were introduced, especially that which gives a level surface to the sole of the share. The work made by this implement, according to established dictum, with regard to rectangular furrows, ranked highly. Messrs. Hensman's plough is a strong serviceable implement; but its work wanted regularity. Busby's plough would have made very good work had it not been so cramped. The implement itself is exceedingly well made. The "Eclipse" Plough, belonging to Page, of Bedford, made broken work; and that by Ball wanted regularity, and a square furrow-sole; the wheel-fastenings defective. Goulding, of Leicester, competed with a good plough; but the work was crowded, and but little harrow edge given. The other competitors were—Law, of Shettlestone; Mason, of Stanford; Reeves, of Bratton; Tasker and Son, Walter and Haslam, whose new wheel-fastenings are expensive, and soon liable to disorder; Bruce, of Teddington; and Oliver Maggs. Should this brief criticism on the quality of work not quite accord with the award of prizes, our readers should remember that good work does not always decide the matter; there are other considerations, such as draught and price. The following table may, perhaps, solve difficulties that have arisen to some minds:—

Name.	Traction	Length.	Dimension of Furrows.	Price.
				£ s. d.
Busby	135.0	175	6 by 9	4 4 0
Hornsby	139.76	175	6 .. 9	4 17 0
Reeves	120.625	175	6 ... 10	4 16 6
Tasker	136.54	175	6 .. 11	5 8 6
Wallis & Haslam	129.9	175	6 ... 10	3 18 6
Bruce	132.95	175	6½ .. 11	4 15 0
Goulding	136.35	175	6½ .. 9½	5 0 0
Page	132.95	175	6 ... 10	3 10 0
Ball	144.	175	6 ... 9½	4 14 6
Hensman	142.3	175	6 ... 9½	4 4 0
Ransome	135.93	175	6 ... 9	4 19 0
Second trial..	137.0	175	6 ... 9	
Howard	138.46	175	6 ... 9	4 17 0
Second trial..	143.1	175	6 ... 9	
Maggs	143.33	175	6½ .. 9½	4 17 6

THE GENERAL PURPOSE PLOUGHS.

The ploughs in this class were tried on Monday, July 11, but not decided upon till Tuesday. They were tested in two fields; thirteen in number, but several tired of the contest before the shadows began to creep slow and long about the evening of the first day. When Hornsby's completed their work on the Tuesday, it was decided to be perfect, and so great an interest was excited, that it

became difficult to restrain the public within those bounds which were generally preserved. Ransomes' work on the second day was scarcely equal to that of the first. Rules were applied, the dynamometer was anxiously watched, and little conferences were held amongst the various competitors as to the advantage gained or lost as each furrow was guided to and laid upon its forerunner. The scene was a very interesting one, and though sides were warmly taken, temper was well kept. When Howard's plough set up its ridge, the excitement increased, and as the furrows were deposited by the breast in straight lines, at a regular angle, leaving a clean cut bottom, difficulty to keep the curious from following became greater. Ball's plough, too, made good work.

The results were as follows:

Name.	Distnc. Yards.	Time. min. sec.	Units of Power.	Dimen. of Slice. Inches.	Price.
					£. s. d.
Hornsby..	80	1 45	120.2	7 by 9	5 0 6
2nd trial.	80	1 40	122.2	7 .. 9	
Busby....	80	1 20	117.1	7 .. 8	4 17 6
2nd trial.	80	1 20	117.5	7 .. 9	
Hensman...	80	1 8	120.663	7 .. 9	5 6 0
2nd trial.	80	1 23	115.20	7 .. 9	
Ransome...	80	56	117.85	7 .. 9	5 2 0
2nd trial.	80	1 40	118.42	7 .. 9	
Howard ..	80	1 35	123.35	7 .. 9	5 2 6
2nd trial.	80	1 27	120.19	7 .. 9	

THE HEAVY LAND PLOUGHS.

In this class there were fewer competitors. The ploughs are gigantic implements, pulling four horses very hard. Some of the breasts are more than six feet in length, and will deal with any furrow, that six or eight horses, were it possible economically to employ them, could cut from the solid ground. Ransomes' implement opened the way with some broken, and not very satisfactory work. It was followed by Howard's, making splendid work; but masterly as this was, it was excelled by Hornsby's plough, to which the public voice made the instant award.

The results are as follows:

Name.	Distnc. Yards.	Time Seconds.	Units of Power.	Dimen. of Slice. Inches.	Price.
					£. s. d.
Hornsby..	50	50	132.38	8 by 12	6 12 6
2nd trial.	50	45	130.1	8 .. 12	
Ball.....	50	50	137.33	8 .. 11	5 17 0
Busby....	50	50	137.	8 .. 11	
2nd	50	42	135.6	8 .. 11	5 16 6
Ransome..	50	45	135.475	8½ .. 12	
2nd	50	55	138.75	8 .. 11	7 15 0
Howard ..	50	74	132.25	8½ .. 12	
2nd	50	50	126.8	8½ .. 12	6 15 6

Visitors to Warwick would almost be led to think that the terms of the Pacific Treaty between France and Austria, and the fate of Italy, were as nothing in the balance, to the award of prizes to the ploughs. Every body was talking about the triumph of Hornsby. The adherents of the various competitors could not help exhibiting some little feeling. Our forefathers would probably have proved their furrows under like circumstances by an appeal to their fists; but customs are changed, and the principle of mediation being adopted, the cool, calculating, impartial dynamometer stepped in between the contending parties, and the decision that might have been come to by force, was quietly determined by figures.

At this distance of time it is possible for a reporter to

look more calmly at the matter, and regarding the question at his ease, with a refreshing breeze playing about his temples, he cries, "And who cares? Why all this ado? Why should a discussion about the lines of a plough's breast lay the world by the ears, at a time when we are preparing to abandon the plough, as it is, altogether, in favour of some happy cross between the plough and cultivator?" More attention might have been concentrated upon steam-power as applied to the cultivation of land. A long and steady test should have been given to the various systems, a test that should have extended over three or four days, the working being continuous. We so seldom find Fowler and Smith together under such favourable circumstances for trial, that one naturally wished to prolong a contest, from which, short as it was, considerable results were obtained. The three days spent upon plough trials show that in the Light Land Class, a plough which re-asserts a principle that has been abandoned, and requires a greater power to turn a smaller quantity of soil than Ransomes', receives the prize. At least this is the conclusion to which most people seemed to come; but it appears that it was not altogether correct, as on looking at the table we see the difference of prices must have had some influence, in addition to the admirable work itself. The straightness of the furrow has not much to do with it: that depends on the skill of the ploughman, who is not an element of consideration. This consideration in the heavy land trial must, however, have had more weight than it should have had, seeing that the draught of Hornsby's plough, which took the first prize, is represented by the figures 131, 19; and Howard's, which took the second prize, by the figures 129, 16; there being only 3s. difference in the price. From what can be gathered of the grounds of judgment, we are led to consider that the judges had no idea at all of conveying to the public a recommendation of the convex breast, else Hornsby's plough would have gained the first prize in the general purpose class, especially when we find that it has an advantage both in draught and price, although the slightest possible. Commending as we do the spirit of Messrs. Hornsby, and thanking them for reducing prices, and pushing established firms to further improvement, it is not our impression that the form of their mould-board will be found to assist the horses, or to reduce the draught on wet clay lands.

The turnwrest plough did not work well. John Eddy's took the prize, and Ransomes' received a high commendation.

The paring plough, patented by Woofe, and exhibited by Snowdon, is a most effective implement, but the ground was so hard that it was not well shown.

Eddington's draining plough was tried on the heavy land. It is the somewhat cumbersome-looking implement first brought into public notice at the Lincoln meeting, although, it had been previously known under various modifications. The windlass is very powerful, and is made more so by the steam-engine itself being run upon the platform prepared for it on its top, and by which means it is held more securely in its place, and thus becomes the fulcrum by which the whole is moved and work performed, *i. e.*, the engine and windlass had to propel themselves along the headland to the point of draught requisite to draw up the plough. This is taken to the further end of the field by a horse; an oblong hole is dug, into which the immense iron-coulter is lowered, having a plug or shoe at its bottom to make the orifice in which the draining-pipes are to be deposited; these pipes are strung upon a long rope, which is then attached to the bottom of the coulter, and they are replenished at fifty-yard intervals, where holes are prepared for the purpose. A simple contrivance facilitates the renewing of the pipes. The soil is moved by the ponderous machine to the distance of several feet on

each side, this of itself being of considerable advantage in opening out crevices for lateral drainage.

HARROWS.

The entries were very large. There are no very noticeable deviations from the old form, introduced as Armstrong's patent "Howard's harrows," which have been imitated in principle in every conceivable manner. There is not that marked improvement in harrows as in ploughs—except, indeed, we recognise chain harrows under this head, which are amongst the most useful introductions for the cleansing of foul land, and the harrowing of seeds and grass land. Their action amongst couch or twitch is to leave it behind, without manual help, in large rolls, completely divested of mould, and ready to be immediately ignited. The saving effected during the two last years by their employment has been very great. With all respect to those gentlemen who gave the awards, but who evidently had had no previous experience with chain harrows, we think that Cambridge's self-expanding harrows worked best. There are two special advantages about them not common to the others—the fixed link, and their adaptability to different sorts of work by the division of the harrows, so that it can be used with one horse or two.

What a variety of harrows, possible and impossible, to suit all possible soils, under all impossible circumstances! Manifold as the tastes of inventors were the skews and skriggles of harrow beams, with joints here and joints there, to accommodate the teeth to inequalities of soil. Everybody wanted a trial, and as nobody believed in the superiority of any other harrows to his own, of course the judges were obliged to be impartial and patient. The day was hot, the dust obeyed no breeze, and the trial was effected on ground in such a state as to give rather difficult data for judgment. Messrs. J. and F. Howard took the first and second prize, and Messrs. Page the third, for light harrows; whilst for heavy harrows the first prize was awarded to Messrs. Howard, the second to Messrs. Page, and the third to Messrs. Ransomes.

Our attention was caught by an entirely new form amongst these implements, which should have worked better than it did—"Delta's Patent Harrow," exhibited by Law, of Shettlestone. It has met, we understand, with great success in the North; and there is something about it that creates in us a belief as to its utility. The idea which seems to have been followed out in this case was to make a harrow that should be perfectly steady and firm in line of draught, yet free to give to the undulations of surface, now working on the crest of the ridge, and now in the furrow. Another object is to possess in the same harrow two or more smaller harrows readily applicable for a single horse. The main beams in the line of the draught are hinged together, forming the frame. Two bulls in each are braced out from the frame at an angle of about 30 degrees, and contain the teeth. The width of the one-horse harrow is 4 feet 8 inches. For two horses two are yoked together. They should work steadily; the wings are easily raised for cleaning; they pack in small compass, and are less in price than most others.

CULTIVATORS.

The trials of these implements created much amusement to the public, and not a little anxiety to the inventors. The ground was very hard, and very tenacious where the cultivators for heavy land were shown. In Warwickshire it appears to be the custom to work four horses at length, and no contrivance was adopted to bring the animals nearer to their work, consequently a great deal of confusion ensued. The horses started irregularly; or when they pulled, pulled with such

a violent sudden strain as to break a stay or snap a share, and when the implement did not give way the gears did. The Stewards had hard work to keep things going at all. We give results of trial—

	Cutting width.	Power.	Prize.
	ft. in.		
Bentall	4 4	4·8	1st
Carson	4 9	6·7	
Clay	4 5	3·8	3rd
Coleman	3 5	4·39	2nd
Crosskill	4 8	5·2	

The trial of heavy land cultivators was made unfortunately without the dynamometer, so that very little value can be attached to it.

Bentall's, with a cut of 4ft. 6in., worked the horses very hard, and laid the ground to our mind too flat. It received the second prize.

Coleman's, a 7-tined cultivator, cutting 5ft. 3in., worked six horses hard, but left the land in a better state. First prize.

Warren's—the cut 4ft. 3in. wide, four horses in length—abandoned as hopeless.

Clay's—four horses, 4ft. 5in. cut—work well done; but disqualified by share breaking. The arrangement of this cultivator attracted general attention. The tines are fixed in a very simple manner upon bulls, running at right angles to the line of draught. These bulls work within the frame in carriages, being moved partly round at pleasure by the action of levers and arms. The teeth, instead of being forced forward at the turn, to release the frame-work, are lifted backwards, and so enables the horses to turn with the greatest ease without distress or stoppage to the horses. Messrs. Ransomes Biddle's is too well known to require notice. It received the third prize.

CLOD CRUSHERS AND ROLLERS.

The competitors in this class were sixteen in number. The land was in such a state that very little could be determined with respect to the work done. On passing over the land after the trial was over, it took a keen eye to detect any difference between the work done by a plain roll or a clod crusher, or between a clod crusher weighing 15 cwt. and one weighing 25 cwt. The land should have been more thoroughly harrowed before the rolls were employed, and recourse should have been had to the dynamometer. The trustees of Mr. Crosskill received the first prize for a field roller, consisting of nine cast-iron cylinders, 2ft. 8in. in diameter, 8in. wide; weight 18 cwt. Price £14 10s.

Messrs. Hill and Smith exhibited two capital sheet-iron rollers, for which they took prizes; and Messrs. Holmes received a high commendation for the same appliance of sheet iron; one of these rolls weighing only 10 cwt., covering seven feet of ground, and with three feet diameter, can be purchased for £14. Ballast pigs are sent with it, if desired.

Messrs. A. and E. Crosskill receive a prize for their excellent clod-crusher, the wheels being of different diameters, to clean themselves. Cambridge's, to which a prize was given, has a notched wheel between the ribbed ones, of different diameters, so that it can be made a clod-crusher; or, by replacing the notched discs by the ribbed, into a drill roll. If one frame can thus be made to answer two purposes, expense is certainly saved.

MOWING MACHINES.

Three mowers entered upon this contest for a silver medal; one was a mower proper, and two were combined reapers and mowers. Burgess and Key's carried off the honours by general acclaim. The attendance was very large, and every one appeared satisfied that

the work done by each machine was better than could be effected by scythes. A description of the prize machine is not here needed. Suffice it to say that the construction is much simplified, and instead of cast fingers, they are made now of wrought-iron. It cut the acre under the hour, and did not seem to work the horses hard. Of the two others, Woods' made the best work. Harwood's was heavy in draught, and cut too high.

STEAM CULTIVATORS.

It will be understood that Smith and Fowler and Howard, with their partizans, appeared in force upon Mr. Palmer's land last Saturday to prove themselves not simply good substitutes for horse labour: that point was settled last year at Chester. The point to be decided was, and yet is, what is the most economical and best application of steam power to the cultivation of the land? To decide this question these men stepped upon the trial field—truly a field of trial to many a perplexed inventor. It was nothing but a rivalry amongst the methods. It is usual with those who recount the performances of the "Chicken" and the "Tipton Slasher," to commence with a brief notice, first, of the appearance and condition of the pugilists. Allow us to do the same.

Imagine then the "Bruiser" entered by Romaine, a big-bellied fellow, with a knack of hitting round, and decidedly bad-winded. The pugilists entered by Howard, and Chandler, and Crowley, are for the most part gawky fellows, with loose muscle, but having the advantage in long range. Fowler backs the likeliest fellow of the three; more compact, tougher, and better for a long day. There is no mistake about him, his blows are well planted, and straight; in fact he means business.

Should our readers wish us to abandon the Pistiana style, and furnish a mechanical description of these machines, let them attend.

The extreme width of Romaine's rotary cultivator is 10 feet 6 inches, its extreme length is 18 feet, and its weight is 13 tons. It turns in its own length, upon main wheels 6 feet 6 inches in diameter, and 21 inches wide, being controlled by two guide wheels, 4 feet in diameter by 1 foot wide, placed beneath the smoke-box and the cistern. Behind, upon a horizontal axis, revolves a cylinder, 8 feet long and 2 feet 8 inches in diameter, armed with 33 tines, projecting 10 inches from the radius. This cylinder is attached by great iron arms to the axis of the travelling wheel, and is raised and lowered by means of steam cylinders. Spade husbandry is professed to be equalled, at one operation, by a nominal power of 12 horses, and the aid of only two men. Price £800.

Mr. Royd's Apparatus: A ten-horse power portable engine: the windlass with drums on vertical axis, 3 feet 6 inches diam., with friction box to save the rope in case of sudden strain; 1,760 yards of rope; two self-moving anchors, which are palpable infringements of Fowler's patent, the cutting wheels being zig-zag instead of plain, and therefore not so good. A balanced cultivator is worked with nine tines, six cutting 6 inches deep one way, and three subsoiling the same land 12 to 18 inches deep on the return journey. The men employed are three and one boy, and the price about £400.

Messrs. Chandler and Oliver's engine is a ten-horse double-cylinder, manufactured by Robey of Lincoln, having the windlass drums revolving on the hind travelling axle, and driven by gearing from the fly-wheel shaft. These drums carry one thousand yards of rope, which, when given off, passes through a double snatch block lying at right angles to the back of the engine, and from thence diverges to find the two snatch blocks at the extreme points of the implement's line of passage. It

will be seen that the line of work is the base of a triangle, the sides of which are constantly diminishing. Smith's anchors, porters and snatch-blocks are used. The plough, carrying six furrows, three each way, is made by Messrs. J. and F. Howard, price £460. Were it not for the difficulty of moving the engine about with this extra weight of drums and rope, we here behold a good arrangement, and one that is a decided improvement upon the separate windlass. And this question of shifting becomes the more important, because the engine must always be placed in the middle of one side, and before the work can be crossed must be removed. The people employed are four men and one boy.

Messrs. Crowley, of Newport-Pagnell: The engine belonging to this apparatus is an eight-horse portable. The windlass consists of two drums on horizontal axes, being driven by pulleys placed between them. When both drums are out of gear, the belt is carried by a slack pulley, from which it is shifted by a simple contrivance right or left, and the engine keeps running. Smith's anchors, snatch-blocks, and porters are used, and to avoid the "turning bow" a sort of balance cultivator is introduced, which takes a long time turning. Five men and one boy are required; price £480.

Messrs. J. and F. Howard, of Bedford: It is not necessary to do more in describing this apparatus than to say the engine, a ten-horse double cylinder locomotive, is manufactured by Messrs. Clayton and Shuttleworth. The windlass drums are of larger dimensions than formerly, and the porters are improved, price £589. Five men and one boy are required.

John Fowler, of Cornhill: This apparatus consists of a ten-horse engine, with self-moving and reversing gear. Instead of the cumbersome windlass shown at Chester, he has now a driving drum snugly occupying the space between the bottom of the fire-box and the fore carriage, beneath the boiler, having two pulleys on either side, which enable the rope to make two three-quarter turns round the driving-drum, and so prevent its slipping. A pitch-wheel and chain give motion to the engine; in moving from one field to another, one horse only being used to guide. The anchor is on the same principle as of old; but the wheels are placed horizontally, and the metal work is of wrought-iron. 800 yards of rope are sent out, and two men and one boy are required. Price £703. One great improvement is in the cultivator, which is nothing more or less than a skeleton plough.

And now, having seen the competitors trotted out, what do you think? You have formed an estimate of their muscle, limb, and condition. Now, who is to be the winner? The ground is capital; not heavy land, but as hard and brittle as steel. The two-year-old clover-leaf is cropped short. Whoever takes his share in this contest will be sure to make a clean breast of it. There was very little haste to begin on the part of some. Smith likes the ground, but his tackle is not arrived: Romaine collects a crowd, and industriously shows it that he can work with greater facility in air than in soil: Fowler's chicken takes a jaunty turn or so, to stretch himself, predetermining to himself at least the success of the morrow. The judges look as wise and formidable as badges and interleaved catalogues can make them; and the cheery face of the Consulting Engineer showed that he was at his ease, in fact, quite accustomed to the thing—so runs the extract from our note-book made at the time. The evening that closed the first day's trial, the last evening of the week, found Romaine's and Royd's "pets" fairly doubled up; Crowley's and Chandler's *hors de combat*; Smith's "smasher" squaring weakly, and Fowler's chicken deciding cock of the field!

The trial of Monday being of more interest and importance, we will drop our figures, and describe plainly.

The contest was renewed by Fowler, Smith, and Chandler, on a stiff badly-drained piece of seed-land, having an incline of 1 foot in 10, running from E. to W. The engines were placed on the upper headland, save Chandler's, and the implements worked N. and S. Fowler had two sets of apparatus, one working a plough and the other a cultivator, as on Saturday. Fowler's two implements broke up 2 roods 16 perches of ground per hour, at the depth of about 6 inches. The belts that were cleared by impartial spades across the work showed, in both cases, a clear level cut. The cultivator, with its great extended horned share, left the work in a splendid state, and the ploughs followed the curvature of the land in a way that surprised Mr. Fowler himself, all-confident as he was. Mr. Smith's work was, we think, a trifle deeper, not quite so roughly laid, nor did it display, after one operation, quite so good a bottom on being stripped. The quantity of land broke up in the hour was 2 roods 53 perches. But the judges could not make the award upon the quality of work performed. Another test must be brought to bear. The engines, both of the same make and power, must be put upon the break in the yard, the angle of the governors being the same as it was upon the ground, 12°. After some delay the result obtained was this, that Fowler, taking 4 furrows 9 inches by 6, employed a power equal to 10 horses, and taking with his cultivator 40 inches, employed a power equal to 8 horses; whilst Smith, cutting 30 inches 8 or 9 inches deep, employed 11½-horse power. As some inaccuracy crept into the calculation this must be taken only as an *approximate* result; and our previous remarks with regard to the importance of a longer trial are quite borne out.

Supposing we allow the power employed to be equal in both cases, it must not be forgotten that Mr. Smith requires two operations to show such perfect work as Mr. Fowler shows at one. This fact alone will allow of even a more favourable view to be taken of the power employed by Mr. Smith, and yet leave Mr. Fowler the gainer. Apart from this conclusion, however, which shows that the Judges were perfectly correct in awarding the prize to Mr. Fowler, there is another point from which these different steam cultivators may be viewed. Although the prize apparatus is "the most economical application of steam power to the cultivation of the land," *it is not necessarily the best farmers' implement*—that is to say, under prudent circumstances, and for a certain period, taking into account the great number of 7 and 8-horse portable steam engines that are in the country, it is easy to see reasons to induce many farmers to prefer Howard's apparatus to Fowler's. At least the judges commended it.

We were sorry to see Romaine's rotary cultivator so practically inefficient, particularly after the great sums of money expended upon it. It sadly proves that there is a vast difference between inventing to live and living to invent.

Our work of observation being completed in the field, away we went to the implement yard—a little more than 12 acres covered with implements. We found several improvements in detail, very little novelty, and endless repetitions, the implements of the great firms being reproduced 40 times or more.

The great feature of the yard was in the class for

TILE AND BRICK-MAKING MACHINES.

All those who know what brick-making is, and the tediousness that attends the process, will be surprised that they can be made from dry clay, mixed as it may be with stones, or from raw silica, without a drop of water; the particles of which, by the expulsion of the air by an upward pressure, are made to cohere—just one minute

transformed to a dense, polished, jolly brick the next: that is the process. Bricks made in this way, and burnt, are lining our sewers and supporting our heaviest structures. The machine consists of two parts—the mill and the moulder. The mill is a large iron pan, with rollers that run on a stationary cross-shaft, which is carried in two side cheeks with slotted guides, so that the rollers may rise when the charge of clay is excessive. The dust so ground passes through gratings in the outer circle of the pan into a receptacle beneath, from whence it is raised by elevators to the hoppers above the moulding table. Motion being communicated, the tappit wheel turns the mould table the length of one mould. This action delivers two empty moulds under the hoppers to receive clay, delivers two bricks to the attendant, and gives a powerful upward pressure to the clay received in the moulds that have just left the hoppers. The table is then stationary, while the two eccentrics grind the final charge for two bricks. When the eccentric pistons are clear of the mould the tappit again turns the table one brick length, and the same action is renewed. The bricks delivered, are removed on a board, and go direct to the kiln, without being injured. The whole motions of this machine are performed by a pair of camb-wheels, the pressure being communicated by a pair of rollers running on the cambs with the mould pistons fixed on the shaft between them. With a six-horse power engine, and a table containing six moulds, 24 bricks per minute can be delivered, and a pressure equal to 330 tons can be exerted upon each brick. The ordinary clays, however, require only a pressure of 40 tons. This valuable machine is patented by Hersey and Walsh of Wakefield, and is exhibited by Mr. Chamberlain, of Kempsey. Its entire weight is 22 tons. Price £1,200. Silver medal awarded.

Mr. Chamberlain also shows another machine, invented and manufactured by the same firm, Messrs. Bradley and Craven, of Wakefield, for making bricks from plastic clay. The machine completes the pugging, moulding, pressing, and delivering in one operation, and makes about thirty-five per minute. The moulding and pressing are similar to those done by the machine above-named. He also exhibits a tile and brick machine, invented and manufactured by Messrs. Wright and Green, of Rugby. It forces through the face a beautiful column of clay, from which it cuts by its revolving wire, from a kind of reel, about 50 bricks per minute. The tiles or pipes in like proportion (second prize).

Mr. Whitehead's, of Preston, is a very effective and powerful machine for the manufacture of both pipes and bricks. The clay used by the machine requires much preparation, as indeed do all machines using the wire instead of the mould, which appears to be a distinctive designation of the two processes of brick-making (first prize).

Mr. Scragg exhibited a very useful hand-power machine, for making bricks, tiles, and pipes, to which the first prize was awarded. Mr. Whitehead's hand-power machine did not screen quite so well, but appears to be a very useful machine.

Messrs. Cockey and Sons, Page and Co., and Brown and May, also exhibited highly useful machines. This useful order of machinery has done much for agriculture in respect to drainage. The dry clay brick-maker is of more extended application.

Messrs. Parkes and Messrs. Mapplebeck and Co. took the first and second prizes for draining tools; truly a good selection, and one quite dangerous to approach without due precaution.

The atmospheric hammer was a curious and interesting object, collecting its crowds of admirers, who hearing its heavy "thud," of course flocked to see it. It

was managed by vacuum in a very simple manner, and, with four-horse-power, gave a blow equal to 1 ton weight. A medal was awarded to it.

Messrs. J. Warner and Sons, of London, exhibited a highly useful collection of hydraulic machinery. Any one who wants to be gauged for a pump, that's the place to go to. The judges were quite right to commend them.

Who would not be "Fisherman," "Musjid," "Pantagoon," or "Black Eagle," to have such care bestowed upon one, as such favourites as these meet with at the hands of Cottam and Hallen, the managers of the St. Pancras Stable-fitting Works? One could almost resign oneself to oats and hay, in such airy, remote, odourless apartments. The wonder is how the grooms fare! Verily the brute gets more consideration than the human creature. For all that, the arrangements are very perfect, and worthy of great commendation.

Now that the black-jack and fly are destroying the turnip, and also the farmers' hope of a good store of winter keep, and the citizens' hope of cheap mutton and beef, the judges are wise in commending Mr. Rowley's very useful "duster," which opened up a career of success against this crawling and infinitesimal enemy, dating from Chester. We need not inform the farmer that it takes three rows at once, drawing up the fly by suction, and dusting the plant completely top and bottom with any preparation that may be thought proper. Some think that the failure of the turnip crop means "no turnips to mutton," but really it means mutton and beef 1s. per lb.

The application of gas, on a limited scale, to detached residences, is now made possible by T. B. Porter & Co., of Lincoln. It consists of three parts, that can be sheltered under any little "lean-to." These parts are the furnace or retort, the combined apparatus (forming in one vessel the hydraulic, main, condenser, and purifier), and the gas-holder. The machinery is at present made of six sizes, and exclusive of brick-work and fixing it may be obtained at the following cash prices:—For the supply of 15 lights, burning four hours, each light equal to ten sperm candles six to the pound, £47 10s.; for the supply of 120 lights, ditto, £150. It is calculated to afford a saving of 20 per cent. on the ordinary mode of making gas.

We spent an hour amongst Messrs. Gibbs and Lawson's collection: evidently, like many others, thinking them as interesting as any feature of the show. The taste displayed in arrangement surpasses our power to praise—they both excel each year; and endeavouring as they do to improve our varieties of plants, they deserve most thoroughly that support so cordially accorded them.

Those who feel how much straw is wasted in brick yards will value a sort of Manchester machine exhibited by Moody, for the weaving of straw fleeks, and also of thatch for stacks, &c. It is an ingenious contrivance.

We noticed several saw-benches, having band or circular saws. Those exhibited by Holmes and Son, by Barratt and Exall, Ransomes and Sims, Clayton and Co., &c., are worthy of attention; also a capital little saw-bench, by which a bit of wood may be cut into any shape in no time, invented by Duppa Duppa, Esq., of Wistanstow—quite a Robinson Crusoe sort of contrivance; and we quite expected to behold the broad slouched hat and bearded face bending over it; but we could find no one to discourse to us its entire wonders.

The principal reaping machines are those exhibited by Burgess and Key, Crosskill, Samuelson, Harwood, Cranston, Howe, and Cuthbert, the three last not being self-delivering.

It is our opinion, that with attention to details, changing the line of draught, removing the India-rubber

webs, and substituting a straight hand-knife with sickle edge, or minute lancet points, Crosskill's Bell's machine would be the most serviceable machine for the farmer. Burgess and Key's does good work where the corn is standing, but it is a heavy cumbersome affair. Were it as good as the mower, it would deserve unqualified praise. Dray's machine still holds its way; and Cuthbert's improved Hussey has wonderfully good testimonials. Indeed we do not see why these little machines may not have a great run. They are not self-delivering, but four or five women following will put the sheaf raked off, into hand, and remove it from the way of the horses before they make their next journey.

There were 43 exhibitors of steam-engines. As being superior in workmanship, we desire to call attention to the engines of Messrs. Clayton and Shuttleworth, Tuxford, Hornsby, Ransomes and Sims, Barrett and Exall, Garrett and Sons, Smith and Ashby, and Ruston and Co. There is a marked and growing attention to the theory of combustion in these, and the sooner the farmers acquaint themselves with the laws of combustion, &c., the sooner will they be provided with engines which produce more with less fuel. We were delighted to witness the great and novel sight of 38 engines all at work at one time. Nothing was more calculated to impress upon the mind the vast idea of progress.

One very curious affair amused us. Everybody asked what it could be, as they saw it from without the walls, towering above everything, and some were not much the wiser when they approached it—we mean Mons. Pavy's Patent Granary. It consists of a small thrashing machine, and a winnowing, above which on a frame work are four cylindrical metal bins, their top 30 to 60 feet high, holding about 200 qrs. of grain. It is caught from the thrashing machine, passed to the winnower, and so to the sack if to be immediately stored. If to be preserved, it is whisked up into the bins above, by elevators, aired when necessary by coming down and going the round, and so on. It was to be sold on Friday; we don't happen to know who became the fortunate possessor; but we could not help thinking that the man to whom the hammer fell, would feel himself in a case with that perplexed individual who won an elephant at a lottery. Cost £300.

Amongst the dressing machines, we found Nalder's rotary screen (a very good thing indeed) and the American suction-blast drill (which for some purposes is better). As we described it at Christmas there is scarcely any necessity to do so now. We will simply say that it weighs in air every single grain separately, and does its chaffing work very effectively, at one operation being chaffer, riddle, and complete blower. The work done is not great, though perfect. The inventor and exhibitor are one A. B. Childs, of London. Boby's patent screen is still more improved, and is making rapid way, by virtue of its excellent properties.

Hayes' waggon (Stamford) deserves, for finish and excellence, great credit; also Milford's—always praised for cheapness and good workmanship.

We were struck with a capital mill exhibited by Childs, of 192, Tottenham Court Road, and Howard and Watts, of Norwich. No mill is like it for feeding purposes, grinding as it does, four bushels in twelve minutes, no matter whether it be wheat, barley, oats, Indian corn, &c. The cylinder is conical, made of a peculiar metal, and revolves within a concave, which guides the flour round and round till it finds its way out.

The gates were numerous, both wooden and iron. There were two lords and one member of council exhibitors in this class; and the member of council won a commendation for a well-finished cheap article—we mean Mr. Torr. There were gates and posts at 24s. and up-

wards, and iron gates as low as £2. Great taste was displayed by Messrs. Greening, Hill and Smith, Maplebeck and Co., in ornamental park and garden gates.

Joseph Gardner, of Banbury, exhibited a chaff-cutter that cuts the yelm at twice instead of once, each alternate knife being fixed in advance of the other towards the outer diameter of the wheel, and one-half of the mouth-piece being about two inches beyond the other. We don't see wherein a saving of labour is thus effected, unless the eating of a cherry is generally understood to be facilitated by making two bites at it.

Burgess and Key: A commendation was given to an implement invented by Augustus Munn, Esq. for brushing caterpillars and other insects off the turnip plants, for thinning the plants, and for hoeing the intervals. The brushes revolve on the same spindle with the thinning-knives, preceding them, and the hoes follow, to earth-up the worms brushed off the plants. The implement takes two rows at once.

Robert Hialop, of Haddingtonshire: A patent dressing machine with rotary screen. It is rather a large and expensive affair, but makes very good work. Elevators conduct the grain from the heap to the hopper, whence it falls into a revolving screen formed of wire cloth of different sized meshes, tightened over an Archimedian screw. The riddling surface thus obtained is very great, as the screw makes four turns in the length of a foot. The cylinder is 18 inches in diameter, so that a riddling surface of 19 feet is provided in each lineal foot. When the grain arrives at the termination of the cylinder, divested of dust, seeds, and small corns, it is delivered to a hopper, and from thence, while falling in a thin stream, upon a fixed riddle, is exposed to a strong blast, which tests the gravity of the grain.

Perreaux and Co., Mark-lane, showed a vulcanised India-rubber pump valve, which should come generally into use. It takes the form of a tube, flattened at the extremity, similar to the mouth-piece of a hautbois. It seems very simple, and not liable to get out of order. Price 4s.

Mr. Sawney, of Beverley, has introduced a new motion to his dressing-machine screen, by means of a "tappet" wheel, which we cordially recommend.

William Foster, of Lincoln—a cheap and effective rotary corn screen.

Burney and Bellamy, Mill Wall, London: The wrought-iron cattle trough, cisterns, and granaries manufactured by this firm attracted special attention. A cistern, holding 800 gallons, may be had for £9 10s.

Robert Maynard, of Whittlesford, Cambridge: We found at this stand a very interesting dibbling machine, which received a commendation. It is intended for one horse, and carries four rows. In front of the droppers are four discs, armed with dibbles. These revolve, and as each dibble leaves the soil a half-turn is given to it, and a clean hole is thus left. This machine is capable of dibbling with one man and one horse four acres per day.

S. and E. Ransome, Strand, London, exhibited Martin and Purdie's patent argand fire bars, to which we beg leave to call attention. By means of numerous perforations through the bars the supply of air is very much increased, and an intense heat is obtained at a saving of 25 per cent. in fuel. The bars remain black under a great fire, and offer peculiar facilities for the removal of clinkers. Price £12 to £16 per ton.—Commended.

"Delta's" and "Sigma's" implements, exhibited by Law, of Shetteston, and Powell, of Hursgreen, Sussex, attracted a good deal of attention. Frequent descriptions have been given of the hand-dibble, but "the *Mel-tum in parvo*" has not been noticed. It is a one-horse implement, for cultivating, hoeing, drawing furrows, for manure or potatoes, earthing up, subsoiling, or

broadsharing. The breasts are attached by hinges to the forepart of the body, and expanded simultaneously by a screw from behind. It is a very simple and effective article. A universal plough, of the same description, is shown by Law, but its uses are not so manifold as Powell's. We also found a self-relieving horse-rake. There is only one row of teeth, on which is placed a slide, which delivers the rakings and frees the teeth in case of meeting any obstruction. The rake and slide are free, until the resistance to the one brings the other into action: this is effected by means of ropes passing over pulleys. The horse, attached by traces to the loops of the pulley-blocks, draws the rake into the strewn crop: the pressure against the slide pushes it home to the head. To deliver the rakings, a pressure upon the handle, so as to increase the resistance of the rake-head, is necessary, when the slide runs forward and clears the teeth.

T. Perry and Son, Bilston, Staffordshire. A specimen of a good sheep-feeding, folding, and housing hurdle. It is 12 feet long by 3 ft. 6 in. high. It is constructed with strong angle-iron frame, sheet-iron panels to protect the sheep from cold wind, and is fitted with racks and troughs for hay, corn, and cake, with lids to them. Four wheels beneath allow it to be easily shifted. Price £3 10s.

Thomas Lyne, of Malmesbury.—The mechanical contrivance evinced by this stile is very good, but it does not at all accord with the present style of our ladies' dresses. No gentleman with any regard for his wife's feelings could countenance one of them upon his estate.

We could not but admire the large assortment of draining, grafting, and gardening tools, &c., &c., exhibited by Peyton and Clarke, of Birmingham. The workmanship was very superior, and the prices reasonable.

Richard Garrett and Sons.—We have here much pleasure in calling particular attention to a new patent combined thrashing and dressing machine. Great efforts have been made by this firm for many years to introduce to the public a really good and cheap combined machine. Improvement has followed upon improvement year after year. We have been compelled to admire the manner in which difficulties have been overcome. This year, however, we have to chronicle quite a marked and distinct advance, which, should it prove as true in practice, as one is led to suppose it will do, must secure to the inventors the decided support of farmers. To use the terms of the patentees, "the machine is *one-third less in bulk and weight* than machines on the ordinary construction, and performs the various operations of preparing the corn for market in a manner far nearer perfection than has hitherto been the case in any machinery employed for the same purpose, *with less than half the usual number of spindles, bearings, pulleys, and driving belts, and with one-third less power.*" Making due allowance for the partiality of implement makers for their pet offspring, and reducing the sum total of advantage by two, we have still a great gain. The drum, straw-shaker, screen, and elevators remain as they were; the improvement is to be looked for in the dressing and winnowing machinery. Instead of two or more blowers, one powerful blower is substituted, fixed on the drum-shaft. Two trunks proceed from this, and the air is forced downward in an oblique direction by one under the screen, where it is brought into contact with the chaff and corn, while the other trunk, nearly in a line with the fan, conducts two separate blasts to meet the corn on its journey through the oscillating and rotary riddles to the sacks below. The price of the 5-horse power machine, with a drum 54 inches long, is £85. We wait for the reports of those who will use this combined machine, thinking that it may turn out as well as

it promises. Before closing our notice of this improvement, it will be well to add that these blasts are very easily controlled, and adapted to any grain that may be exposed to their influence.

W. Goulding, of Leicester, a patent oil-box wheel for ploughs, &c. The axle has a small bush secured upon it by a collar. Behind the bush is a flanged cap, extending to the centre, with leather washer. The front wheel having enclosed oil-box, is slid to the back, and a cap and three screw bolts secure the whole, and forbid the entrance of grit.

Messrs. Hill and Smith, of Dudley, introduce what they consider an improvement into the manufacture of harrows. The rivets which hold the frame together are hollow. The teeth are driven through these rivets, and fastened by a small peg. But we are not led to think very highly of this method.

Woods, of Stowmarket, showed the best and cheapest root pulper in the yard. All the complications of worm, cutter block, and oscillating motion are dispensed with. Price £4 15s. We found here also an ornamental compact mangle, occupying 3 feet by 2. The rollers are weighted by a box of stones beneath, instead of being kept to their work by springs. Price £6 10s.

Every farmer should have one of Eaton's (of Thrapston) lifting jacks, consisting of wrought-iron rack bar, wheel and pinions. One that will raise six tons is priced £4.

Mapplebeck and Lowe, of Birmingham, showed a very capital little implement for drilling mangold and turnip seed. It takes two rows. The cups are driven from a large wheel in front, which goes between the ridges. The rollers slide along the spindles so as to accommodate themselves to any inequality, and carry the coulters, and deposit always on the top of the ridge. A circular coulter in the middle of the front roller would be an improvement. The seed would be so surely and so lightly deposited by this little implement, that, so far as the sowing might be concerned, no anxiety need be felt about the plant.

Messrs. Ransome, Tuxford, Smith and Ashby, Turner, Haywood, Barrett and Exall, exhibited a number of most useful 1, 2, 3, and 4-horse portable steam engines. These miniature engines are getting very much into use for chaff-cutting, pulping, churning, pumping, &c., and are found to be extremely economical. The workmanship is quite equal to that of the larger engines. The Turners of Ipswich have been long and deservedly famous for their two and three-horse engines, which they were amongst the earliest to introduce, and that they still rank amongst the first with. They have also, perhaps, the most extensive business in the trade, both for crushing and grinding mills, and their standing was in this wise proportionately strong. Few houses have stood the test of hard work and long service with more success.

Nothing particularly new met our eye in horse-hoes. Garrett's and Priest and Woolnough's, and Garrett's Taylor's appear the best. They are all strong, well made, and completely under control.

Mr. Baker, of Woburn, having lost some beasts by fire, in consequence of not being able to get at their necks to set them at liberty, has invented a "cattle fastening," by which means a whole shed of animals may be released instantly. A lever outside the building commands all the fastenings simultaneously.

Henry Ellis, of Holbeach, exhibited a revolving cultivator, which acts well on light dry land. It consists of a frame on two large iron wheels, with gear wheels on the naves, driving two pinions, to which are attached two cylinders, having long circular teeth arranged so as to be adjusted to any depth. The cylinders revolve, and

bring up the twitch, grass, &c., delivering them over the top.

By placing blades upon the teeth of his haymaker, Mr. Nicholson seeks to make a nettle and thistle extirpator, &c.

There was a large assortment of cheese-making apparatus, cheese presses, and churns, shown by Messrs. Waller, Mellard, Travis, Carson, Mapplebeck & Co., Burgess & Key, Tinkler, &c., all showing that great care was being taken to economise our dairy produce.

Messrs. Baylis & Co., Perry & Son, Hill & Smith, Greening, Mapplebeck & Co., Brown & Co., and

Morton, have established themselves as first-class wire-fencing and iron-fencing manufacturers. We noticed nothing particularly new, except Morton's patent wire cable strand-fence, with winding straining pillars 200 yards apart. This is not nearly so portable as it might be, but, as the best perhaps in the yard, a commendation was given to it. The method adopted to tighten violin strings is employed to strain the wires.

Considering there were 4,000 implements, we might keep writing indefinitely; but having remarked on most of those implements which were marked specially by excellence or novelty, we think it best to draw this notice to a close.

A CATALOGUE OF THE IMPLEMENTS EXHIBITED AT THE WARWICK MEETING.

The following gives the Catalogue of the *largest* collection of Implements the Royal Agricultural Society has ever yet brought together. It will be the more appreciated when we say that Catalogues were difficult to procure at last, even in the Show-yard.

BENJAMIN FOWLER, of Whitefriars Street, London.

Several specimens of a cast-iron bored pump, price £1 10s. to £5; (new implement) a small cast-iron bored pump, with brass valves, fixed on plank, price £1 10s.; several improved cast bored straight body pumps, price from £1 15s. to £5 5s., improved and manufactured by B. Fowler and Co.; a bundle of section hose, price from 2s. 6d. per foot; a bundle of delivery hose, price from 8d. per foot; a parcel of branch pipes and jets; a bundle of pails, price 4s. each; a bundle of India-rubber tube, price 6d. per foot; a parcel of brass swivel unions, price 6s. 6d., all manufactured by B. Fowler and Co.; a cast-iron bored pump, with detached barrel, for wells over 30 feet deep, price £4, improved and manufactured by B. Fowler and Co.; several wrought-iron portable pumps, price £2 10s. to £3 5s., manufactured by B. Fowler and Co.; a copper portable pump, on folding legs, price £7 10s.; a wrought-iron pump for fixing to back of carts, price £2 5s.; a copper pump for back of carts, price £3 15s., improved and manufactured by B. Fowler and Co.; a garden watering engine, price £3 10s., manufactured by B. Fowler and Co.; a portable garden force pump, price £7 7s., improved and manufactured by B. Fowler and Co.; several specimens of Holman's patent double-barrel force and irrigating pump, price £15 to £33 10s., invented by Stephen Holman, of Deptford, improved and manufactured by B. Fowler and Co.; a brass force pump, on brass foot, price £5 15s.; another size, price £7 10s., improved and manufactured by B. Fowler and Co.; a lift pump, on plank, price £4 16s. 6d.; another size, price £8; and a water tank, on wheels, galvanised, price £3 10s., manufactured by B. Fowler and Co.; four sizes of Holman's patent double-action pump, for steam power, price £8 10s. to £23, invented by Stephen Holman, of Deptford, improved and manufactured by B. Fowler and Co.; a Holman's patent double-barrel force pump, in frame, price £23 10s.; an improved hydraulic ram, price £15, improved by Freeman Roe, of Wandsworth, manufactured by B. Fowler and Co.; a model hydraulic ram, with tanks for showing the action of the hydraulic ram, price £5 5s.; Holman's patent double-action pump and steam gear, price £32 10s., invented by S. Holman, of Deptford, improved and manufactured by B. Fowler and Co.; an improved sluice valve, for shutting off the supply through liquid manure or water mains, price £3 3s.

THOMAS BIGG, of Leicester House, Great Dover-street, Southwark, Surrey.

A sheep dipping apparatus on wheels, complete with crane and cradles, price £14; a sheep dipping apparatus, with iron bar drainer, price £5; a sheep dipping apparatus, price £4; a sheep dipping apparatus, with wooden drainer, price £3, invented, improved, and manufactured by the exhibitor.

JOSEPH GARDNER, of Banbury, Oxfordshire.

Several specimens of (new implement) a patent chaff machine, price £7 10s. and £10 10s., invented and manufactured

by the exhibitor; a patent Gardner's turnip cutter for sheep, price £4 10s., invented by the late James Gardner, of Banbury, and manufactured by B. Samuelson, of Banbury; a beam mill on wood stand, price £2 6s.; a horse hoe, price £3 3s.; an iron tooth drag rake, price 11s., improved and manufactured by the exhibitor.

NATHANIEL SMITH (late W. L. Fisher), of Thrapston, Northamptonshire.

Two specimens of a patent field roller, price £8 and £10; a patent clod crushing roller, price £15; a patent horse rake, price £7 10s. (received a prize at the Manchester and Liverpool Agricultural Society's Show at Wigan, 1857; also a prize at the Royal Show, Salisbury, 1858); three specimens of an improved chaff machine, price from £3 15s. to £10 (took the first prize at the Preston Show, 1856; also a special prize at Wigan, 1856); an improved five-rowed steage corn drill, price £10 10s., to drill turnips £1 10s. extra (received the first prize of £5 at the Royal Show at Waterford 1857, the first prize of £5 at the Royal Show at Londonderry 1858, first prize at Ulverston, and first prize at Manchester 1858); an improved two-row turnip and mangold drill, price £12; an improved turnip mangold, and manure drill, price £6 10s.; an improved cake mill, price £3 5s.; an improved double cake mill, price £4 10s. (received the prize at Manchester, August, 1858); an improved bean and cake mill, price £5; an improved bean mill, price £2 10s.; an improved one-horse power, price £12; an improved steage horse hoe, price 6l. 10s.; and an improved seven-tined cultivator, price 5l., all invented improved, and manufactured by the exhibitor.

BURGESS AND KEY, of 95, Newgate-street, London.

A reaping machine, price 42l. 10s., invented by C. H. McCormick, of Chicago, U.S., improved and manufactured by the exhibitors (the Royal Agricultural Society's first prize was awarded to this machine in 1855, and their prize of 15l. in 1856; it also received their prize at Salisbury in 1857); a grass mowing machine, price with two knives 30l., invented by J. Allen, of New York, improved and manufactured by the exhibitors; (new implement) a revolving horse hoe, price 8l., invented by Wm. Augustus Munn, Esq., of Throley House, near Faversham, Kent, and manufactured by the exhibitors; a package of adjustable scythes, price 4l. 10s., invented by Robert Otway, of Lambeth, and manufactured by the exhibitors; three sizes of a force and lift pump, or farm fire engine, price on stand 13l. 1s. to 26l. 10s., invented by Kase, of America, improved and manufactured by the exhibitors; a patent American churn, price to make 3lbs. of butter 17l. 10s., and various other sizes and prices up to one to make 12lbs. of butter 21l. 12s. 6d., invented by C. J. Anthony, of America, improved and manufactured by the exhibitors (has received prizes at all the meetings of the Royal Agricultural Society since its introduction, including the one at Chester, also the Great Exhibition in 1851); and a packet of Bottes à Houppes, price 2s. 6d. each, invented by Messrs. Quin and Franc, of Paris, and manufactured by the exhibitors.

ROBERT HISLOP, Jun., of Preston Pans, Haddingtonshire.

(New implement) a patent dressing apparatus for grain, price 26l., invented by the exhibitor, and manufactured by Messrs. Dickson and Munro, of Dunbar, N.B.; and (new im-

plement) a patent dressing apparatus, capable of dressing all kinds of grain and seeds, price 28*l.*, invented by the exhibitor, and manufactured by Samuel Rogerson, of Preston Pans, N.B.

SAMUEL HENTON, of 7, Bridge-street, Surrey side of Westminster Bridge, London.

Six patent elastic saddles and two ladies' side saddles, price for gentlemen's saddle 5*l.* 10*s.*, lady's 8*l.* 8*s.* and 9*l.* 9*s.*, invented and manufactured by the exhibitor; six Melton stands for drying saddles, price 10*s.* 6*d.*, manufactured by exhibitor.

ROBERT SWAINE, of Kenilworth, Warwickshire.

A field gate, price 1*l.* 4*s.*, invented and manufactured by the exhibitor.

THOMAS KENNAN and SON, of 18 and 19, Fishamble-street, Dublin.

A Kennan's wire strainer, price 1*l.* 5*s.*; and a set of Kennan's tools for knotting fence wires, price 7*s.* 6*d.*, invented and manufactured by the exhibitors; a wire straightening machine, price 15*s.*, improved and manufactured by the exhibitors; a Kennan's collar vice, price 3*s.* 6*d.*; and a set of tools for erecting wire fences, price 8*l.* 5*s.*, invented and manufactured by the exhibitors (these tools were "specially commended" by the judges at the Chester Show of the Royal Agricultural Society of England, 1858); Kennan's apparatus for blasting roots and stumps of trees, price 1*l.* 10*s.* to 2*l.* 10*s.*, improved and manufactured by the exhibitors ("specially commended" by the judges at the Chester Show of the Royal Agricultural Society of England, 1858); a Kennan's double-action log-sawing machine, price 2*l.* 15*s.*; and a Kennan's house and garden ladder, price 1*l.* 15*s.*, invented and manufactured by the exhibitors; chisel-tooth cross-cut saws, price 12*s.* 6*d.*, 14*s.* 6*d.*, and 16*s.* 6*d.*; Kennan's felling saws, price 1*l.* 4*s.*, 1*l.* 6*s.*, and 1*l.* 8*s.*, improved and manufactured by the exhibitors; a Kennan's double-action log-sawing machine, price 2*l.* 15*s.*, invented and manufactured by the exhibitors.

GRIFFITHS and BROWETT, of 68, Bradford-street, Birmingham, Warwickshire.

A cheese-making apparatus, for cutting, filtering, and pressing curd, made of tinned sheet-iron, price 25*l.*, invented by Mr. Richard Keevil, Laycock, near Chippenham, and manufactured by the exhibitors (seven prizes have been awarded to it, and a silver medal at the Royal Agricultural Society's meeting at Chelmsford, July 16th, 1856); a tinned-iron milk bucket, price 9*s.*; a tinned-iron milking pail, price 4*s.*; a tin milk sieve, price 7*s.* 6*d.*; and a tin whey funnel, price 4*s.*, all manufactured by the exhibitors; an apparatus for cutting, filtering, and pressing curd in the manufacture of cheese, made in brass, price 32*l.*, invented by Mr. Richard Keevil, Laycock, near Chippenham, and manufactured by the exhibitors; a brass milk sieve and whey funnel, price, milk sieve 16*s.* 6*d.*, whey funnel 8*s.* each, manufactured by the exhibitors.

PERREAUX and Co., of 39, Mark-lane, London.

Twenty specimens of a patent India-rubber pump valve, price 4*s.* and upwards, invented by L. G. Perreaux, of Paris, and manufactured by the exhibitors (obtained the second prize at the Exposition Universelle, at Paris, 1856; silver medal at the Concours Régional Evreux, 1857; silver medal at the Exposition de Vienne, 1857; grand gold medal from the Société d'Encouragement, 1857; silver medal at the Royal Agricultural Society, 1857); several sizes of a patent India-rubber pump bucket valve, price 10*s.* to 3*l.* 5*s.*, invented by L. G. Perreaux, of Paris, and manufactured by the exhibitors; several sizes of an India-rubber pump bucket cup, price 5*s.* to 10*s.*; a 3-inch brass and glass model pump fitted with patent valves, price 8*l.*; a 3½-inch brass and glass ditto, price 9*l.*; a 4-inch copper liquid manure pump fitted with patent valves, price 7*l.* 11*s.*; a 4-inch patent copper liquid manure fire engine and garden pump, price 10*l.*; India-rubber and canvas delivery hose pipe, price 1*s.* 6*d.* and 1*s.* 10*d.* per foot; India-rubber and canvas machine driving band, price 84*d.* to 2*s.* 7*d.* per foot; an agricultural waterproof India-rubber over-coat, price 15*s.*; a small-sized India-rubber and canvas pail, price 7*s.* 6*d.*; and a large-sized ditto, price 10*l.* 6*d.*, all invented and manufactured by the exhibitors; bored-out and polished glass cylinder for pump barrel, price 1*l.* 15*s.* to 3*l.* 5*s.* per foot; patent squeegee, price 4*s.* 6*d.*, 5*s.* 8*d.*, and 6*s.*, according to size, invented by George Lamb, of Her Majesty's Navy, and manufactured by the exhibitors.

RICHARD READ, of 35, Regent Circus, Piccadilly, London.

A patent double-lever agricultural fire engine, complete (a silver medal was awarded for this engine at the Exeter meeting), price £24; and three sizes of a patent watering engine, invented, improved, and manufactured by the exhibitor, price £5 5*s.* to £7 10*s.*; patent injecting instrument for horses, cattle, &c., invented by the late John Read, improved and manufactured by the exhibitor, (has been highly commended at several of the Royal Agricultural Society's meetings), price £2 10*s.*; a hollow probang, for relieving hoven or choked calves, sheep, &c., price 10*s.* to £1 10*s.*; a patent hand watering machine, invented, improved, and manufactured by the exhibitor, (highly commended by the judges at several of the Society's meetings), price £2 12*s.* 6*d.*; a patent greenhouse pump, complete, price £2 10*s.*; and a patent greenhouse syringe, price £1 10*s.*; all invented, improved, and manufactured by the exhibitor.

WILLIAM SAWNEY, of Beverley, Yorkshire.

A patent corn dressing machine, invented and manufactured by the exhibitor, price £10 10*s.*; corn dressing machines, improved and manufactured by the exhibitor, price £8 and £9; a corn dressing and cliver machine combined, price £12, and a corn dressing (export) machine, invented and manufactured by the exhibitor, price £6 10*s.*; a farmer's weighing machine, improved and manufactured by the exhibitor, price £2 15*s.*, and a blowing machine, invented and manufactured by the exhibitor, price £4 12*s.*

WILLIAM FOSTER, of Lincoln.

An eight horse power portable steam engine, price £230, and a combined portable thrashing machine for finishing the grain for market, price £110, both invented, improved, and manufactured by the exhibitor, and a rotary corn screen and riddle, price £10 10*s.*, invented, improved, and manufactured by Mitton and Co., of Lincoln.

BURNEY and BELLAMY, of Mill Wall, London (E.).

(New implement) a model of wrought iron cilo or granary for corn, price 8*s.* per quarter for 40 quarters and upwards; and a wrought iron cistern for farm and house purposes, contents 400 gallons, price £5, manufactured by the exhibitors; a wrought iron cattle trough, contents 115 gallons, invented and manufactured by the exhibitors, price £2 15*s.*; a wrought iron cattle trough, contents 75 gallons, commended at Salisbury show, price £2, smaller sizes cheaper; a galvanised iron pump trough, price 16*s.*; and a wrought iron pig trough, manufactured by the exhibitors, price 14*s.* or 3*s.* 6*d.* per foot for 4 feet and over.

F. M'NEILL and Co., of the Asphalted Roofing Felt Works, Bunhill Row, London.

Patent asphalted roofing felt, manufactured by the exhibitors, price 1*d.* per foot; several models and specimen framings of roofs illustrating the cheap construction of roofs for the application of F. M'Neill's asphalted roofing and other purposes, showing the plan of its application to the roofs of the huts of the very extensive Government camps at Aldershot, Shorncliffe, Colchester, and the Curragh of Kildare—accommodation for 40,000 soldiers, and consuming between 3,000,000 and 4,000,000 feet of felt.

R. ROBBY & Co., of Lincoln.

A steam cultivator, invented by Chandler and Oliver, and manufactured by the exhibitors, price £410; a three-furrow plough, to be worked by steam power, invented by Chandler & Oliver, and manufactured by J. and F. Howard, of Bedford, price £50; an eight horse power patent portable steam engine, price £230; a ten horse power patent portable double cylinder engine, with reversing gear, price £290; a portable combined thrashing, shaking, and dressing machine, for finishing the corn for market in one operation, price £115, all invented, improved and manufactured by the exhibitors; all the above prices are subjected to 2½ per cent. discount for cash.

ROBERT MAYNARD, of Whittlesford, Cambridge.

A horse rake, invented and manufactured by the exhibitor, price £8 5*s.*; (new implement) a patent dibbling machine, invented by Charles Clark, of Newmarket, and Robert Maynard, of Whittlesford, and manufactured by the exhibitor, price £25; an oilcake crusher, price £10; a patent portable

lifting chaff engine, for accompanying a portable steam thrashing machine, price £34; and a granary crane, price £9 10s., invented and manufactured by the exhibitor.

W. & M. BAYLIS & Co., of Monmore Green, Wolverhampton, Staffordshire.

(New implement) several specimens of a patent wrought iron hurdle for sheep and cattle, invented by Mr. William Bayliss, of Wolverhampton, and manufactured by the exhibitors, prices various, from 3s. 7d. upwards; (new implement) a wrought iron hand gate, price, 3 feet wide with six bars, 12s.; and (new implement) a length of patent continuous flat-barred fence, invented by Mr. William Bayliss, of Wolverhampton, and manufactured by the exhibitors, price 3s. 1d. per yard; a strong wrought iron vertical bar hurdle, price 5s. 6d. per yard; a specimen of continuous deer fence, price 3s. 6d. per yard; a set of wrought iron garden stakes, price, 2 ft. 3s. 6d., 3 ft. 6s., 4 ft. 9s., 5 ft. 13s. 6d., and 6 ft. high 24s. per dozen; and a specimen length of continuous ox fence, manufactured by the exhibitors, price 2s. 8d. per yard; improved footpath gate, invented and manufactured by the exhibitors, price £1 3s.; two galvanised iron buckets, price 2s. and 2s. 6d.; a galvanised house pail, price 2s. 4d.; a galvanised St. Alban pail with lid, price 3s. 3d.; a galvanised iron chamber pail, price 3s. 9d.; a Waterloo beer can, price 4s.; a strong water can, price 3s. 4d.; a galvanised Waterloo coal scoop, price 2s. 9d.; a galvanised coal scoop, price 2s. 10d.; a wood handle bowl, price 1s. 6d.; a strong socket bowl, price 3s. 6d.; a galvanised wash-hand basin, price 1s. 4d.; a galvanised turpentine basket, price 7s. 6d.; a galvanised seed hopper, price 7s. 6d.; a galvanised water-wrecker, price 2s. 9d.; and a galvanised toilet can price 4s. 3d.; all manufactured by E. Davis, of Wolverhampton; two wrought iron corner hay racks, price, black 8s., galvanised 11s.; a wrought iron sack barrow or truck, manufactured by the exhibitors, price 12s.; a stump bedstead of solid iron, painted green, price £1; a wrought iron wheelbarrow, for stable purposes, price £1 10s.; a self-relieving chain harrow, price £3; a light wheelbarrow, price £1 5s.; a sample of black and galvanised cart and plough traces, price galvanised 5jd., black 4d. per lb.; and a machine for tightening or straining wire fencing, price £1 5s., all manufactured by the exhibitors; a 4-inch gutter, galvanised, price 6d. per foot; a fountain head, galvanised, price 3s. 6d.; a 2-inch pipe, galvanised, price 7jd. per foot; and a registered pump, price £1 15s., all invented and manufactured by E. Davis, of Wolverhampton; a straining standard, with double stay, price 18s.; and a set of wrought iron garden stakes, manufactured by the exhibitors, price, 2 ft. 5s., 3 feet 9s., 4 ft. 12s., 5 ft. 18s., and 6 feet high 28s. per dozen; a wrought iron ornamental tube gate, with handsome cast iron pillars, invented and manufactured by the exhibitors, price £4; a length of light fencing, price 3s. per yard; a pair of strong wrought iron entrance gates, with cast iron pillars, price £7; a length of light fencing, price 3s. per yard; a wrought iron garden gate, and wrought iron pillars, invented and manufactured by the exhibitors, price £1 15s.; a wrought iron garden gate, with light fluted cast iron pillars, manufactured by the exhibitors, price £1 17s. 6d.; a pair of wrought iron entrance gates, with fluted cast iron pillars, invented and manufactured by the exhibitors, price 5l.; a pair of ornamental wrought iron entrance gates, with handsome octagonal cast iron pillars, price £5; a strong wrought iron vertical-barred field gate, price £2 5s.; a wrought iron field gate, price £1 9s.; and a wrought iron field gate, hung to fluted cast iron pillars, manufactured by the exhibitors, price, gate and pillars complete, £2 5s., gate only £1 5s.; (new implement) a wrought iron flat-barred field gate, with wrought iron pillars, price, gate and pillars, £2 7s., gate only £1 5s.; and a strong wrought iron tube gate, invented and manufactured by the exhibitors, price 34s.; a wrought iron footpath gate, with vertical bars, to fix in hedgerows, &c., manufactured by the exhibitors, price 55s.; a coil of best prepared fencing wire, price 12s. 6d. per cwt.; and intermediate upright for strained wire fencing, price 11d.; a plain wrought iron tree guard, manufactured by the exhibitors, price 12s.; a specimen of galvanised game-proof wire netting, price, 2 feet wide, wire 19 gauge, 9d. per lineal yard; 2 ft. 6 in. wide, wire 18 gauge, 1s.; 3 feet wide, wire 17 gauge, 1s. 1d.

ROBERT BOBY, of Bury St. Edmund's Suffolk.

A wrought iron light-land or barley roll, invented and ma-

nufactured by the exhibitor, price £11; a patent corn dressing machine, patronised by the judges at the Royal Agricultural Society at Chester, price £14; large patent corn screens, with new improved extra separator, price £10 10s. to £15 15s.; and small patent corn screens, price £7 to £8 10s., invented by T. C. Bridgman, of Bury St. Edmund's, improved and manufactured by the exhibitor.

JAMES COULTAS, jun., of Spitalgate, near Grantham, Lincolnshire.

A general purpose drill (obtained first-class prizes, viz., £4 at Market Rasen, July, 1856; £5 at Rotherham, August, 1856; £5 at Louth, July, 1857; £5 at York, August, 1857; and £5 at Grantham, July, 1858), price £49, if with for carriage and steorage, as exhibited, £4 10s. extra; a twelve-row corn and seed drill, invented, improved, and manufactured by the exhibitor, price, with swing steorage, £31 10s., if with extra seed cylinder 30s. extra; an eight-row corn and seed drill, price £23, if with extra seed cylinder, 30s. extra; a twenty-four-row small seed and rye grass drill, price £26; a combined dressing machine and blower, invented, improved, and manufactured by the exhibitor, price £11 11s.; a corn blower or dressing machine (commended by the Royal Agricultural Society at Chester, 1858), price £7; and a blower, price 5l.; all invented, improved, and manufactured by the exhibitor.

J. L. and F. L. HANCOCK, of Pentonville, London.

(New implement) a pulveriser plough, price 6l. 10s.; (new implement) a pulveriser, price 6l. 6s.; (new implement) a double pulveriser plough, price 12l. 12s.; (new implement) an improved seed drill, price 20l.; two perfect washing machines, price 7l. 10s. and 5l. 5s.; and a power washing machine, price 50l., all invented and manufactured by the exhibitors.

CHARLES CLAY, of Walton, near Wakefield, Yorkshire.

(New implement) several specimens of a patent prise cultivator and twitchgrass eradicator (obtained a Yorkshire Society's prize of 5l. at Northallerton, 1858), price 6l. 14s. to 11l. 7s., levers for regulating the depth of work 21s. extra; (new implement) three sizes of a patent cultivator and eradicator, price 9l. 7s. to 13l. 7s.; (new implement) a patent turnip scrapper, price 42s.; (new implement) a patent grubber and drag harrow, price 5l. 10s.; all invented and manufactured by the exhibitor.

A. and E. CROSSKILL, of Beverley, Yorkshire.

(New implement) a Crosskill's improved clod crusher, this implement is an improvement upon the well-known roller to which the gold medal of the Society was awarded in 1846, and which received the first prize at the last competitive trial of clod-crushers in 1856), price, complete, 21l.; a Crosskill's improved clod crusher, price, without travelling wheels, 17l. 10s., complete 19l. 10s.; and a Crosskill's improved one-horse cart (No. 1), invented by William Crosskill, of Beverley, improved and manufactured by the exhibitors, price 13l., with shelvings 30s. extra; Crosskill's improved one-horse carts, improved and manufactured by the exhibitors, price 10l. 10s. to 12l. 10l.; a Crosskill's improved pair-horse waggon, price 39l. 10s.; and four pair of Crosskill's improved cart wheels and axles, invented by William Crosskill, of Beverley, improved and manufactured by the exhibitors, price 8l. 5s.; 7l. 10s., 7l. 5s., and 6l. 10s.; a Crosskill's improved iron cart, for liquid manure or water, price 17l., with pump and hose pipe 5l. 15s. extra; and a Crosskill's improved iron street watering cart, price 23l., invented by William Crosskill, of Beverley, improved and manufactured by the exhibitors; a Crosskill's Archimedian root washer, improved and manufactured by the exhibitors, price 5l. 10s.; specimens of Crosskill's improved portable farm railway, price 4s. per running yard; and an improved truck for portable railway, invented by William Crosskill of Beverley, improved and manufactured by the exhibitors, price 5l. 10s.; a Crosskill's improved bone mill, price 85l.; and a Crosskill's improved reaping machine, improved and manufactured by the exhibitors, price 42l.

ALBERT HUDSON ROYDS, of Falinge, near Rochdale, Lancashire.

An outside cylinder portable steam-engine and boiler of ten horse power, ten inch cylinder, price £250; an improved wind-

lass, price £110; (new implement) self-acting crabs, price £20 each; and (new implement) a steam plough for subsoiling and ploughing, price £20, invented by the exhibitor, and manufactured by Barnish and Ratcliffe, of Rochdale, Lancashire.

HARE AND CO., of 31, Essex-street, Strand, London.

A sample of Mabson's anti-smut powder, invented and manufactured by W. Mabson, price 10s. per dozen packets.

S. AND E. RANSOME AND CO., of 31, Essex-street, Strand, London.

Long's specific, reduced to 4s. 6d. per gallon; Long's preservative, or lamb dressing, price 2s. 8d. per gallon; and Long's foot rot lotion, price £1 10s. per dozen pints, invented by Joseph Long, of London, and manufactured by Barry Brothers, of Meriton's Wharf, London; an improved wrought iron sheep dressing fork, invented and manufactured by Henry Inskip, price 15s.; several specimens of sheepskin with fleece improved by the application of Long's non-poisonous "preservative;" Schaeffer's patent steam gauges, of 60lbs. and 200lbs. pressure, in brass case, price £4 and £8; and a Schaeffer's improved counting machine, invented and manufactured by Schaeffer and Co., of Magdeburg, price with four dials or figures to count up to ten, £2 13s. 6d.; a patent sluice valve for gas water, or other fluids, invented by Brown and May, of Devises, price 3 inches diameter and upwards, 10s. per inch; a model of self acting alarm whistle, for steam boilers, invented by Mr. Johnson, manufactured by H. Watson, price £3 10s.; a sample of patent boiler composition for destroying and preventing incrustation in steam boilers, invented and manufactured by Mr. Buckingham, price £2 5s. per cwt.; a sample of Newcastle vulcan cement for all kinds of steam joints and pipes, price £1 11s. per cwt.; (new implement) a patent Argand fire bar, invented and manufactured by Martin and Co., of London, price according to quantity, £12 to £16 per ton; a patent English knuckle washing machine, invented by Grey and Co., and manufactured by the exhibitors, price £3 5s.; a patent spherical bearing and Plummer block, invented and manufactured by Wallis and Haslam, of Basingstoke, price, brasses 2½ inches, £1 12s. 6d.; a lifting jack, with brass bush, manufactured by the exhibitors, for agricultural and other purposes, price to lift 2 tons, £1 16s., to lift 4 tons £2; an improved hand drilling apparatus, price with 6 drills (up to ¾ in.), £2 5s.; and (new implement) an improved post auger, manufactured by the exhibitors, price 12s. 6d.; (new implement) a patent root extirpator, invented by Mr. Alison, of London, and manufactured by the exhibitors, price 8s.; a farm or laundry boiler, to hold 30 gallons, price with black pan, £4 5s.; an improved cheese room stove, with portable self feeder, invented and manufactured by Mr. Bamford, price No. 2, £2; (new implement) an improved roller washing machine, invented and manufactured by the exhibitors, price No. 1, £2 2s. to £3 3s.; a wringing and mangling machine, price £3 10s.; a wringing machine, price £2 5s.; a nest of four corn bins, price £4 15s.; a nest of five patent iron traveling and office trunks, invented by Wilson and Co., and manufactured by the exhibitors, price japanned, £4 7s. 6d.; wrought iron fire proof book safes, manufactured by the exhibitors, price £6 10s. and £11 10s.; a patent filter or purifier, with brass tap and wicker covering over earthen case, price £1; and a pocket or sportsman's filter, price 3s. 6d.; Nye's patent mincing and sausage making machines, invented and manufactured by S. Nye, price £1 10s. to £3 3s.; (new implement) several sizes of Loyel's patent hydrostatic percolator, or urn, in planished tin, invented and manufactured by E. Loyel, of Paris, price one pint 7s. 6d., two pints 12s. to £2 5s.

HART, GIBBONS, AND GIBBONS, of Wantage, Berkshire.

A six horse power portable steam engine, invented and manufactured by William Butlin, of Northampton, price £200; a portable combined thrashing machine for preparing the grain for market, invented by Charles Hart, of Wantage, improved and manufactured by the exhibitors, price £110; portable combined thrashing machines, invented and manufactured by the exhibitors, price £65 and £78.

JOHN MARTIN, of Barmer, near Fakenham, Norfolk.

A Martin's patent root cutter, price £5 10s.; and a Martin's patent root pulper, price £6 10s., both invented by the exhibitor, and manufactured by Creak and Cobby, of Burnham Market, Norfolk.

BERNHARD SAMUELSON, of Britannia Works, Banbury, Oxon, and 76, Cannon-street West, London, E.C.

(New implement) a patent Britannia self raking reaping machine, invented by Seymour and Morgan, of the United States, improved and manufactured by the exhibitor, price at Banbury 32*l.*, in London 34*l.*; (new implement) a Samuelson's pair horse mowing machine, invented and manufactured by the exhibitor, price 20*l.*; an improved horse rake, manufactured by the exhibitor, price with iron teeth 7*l.* 10s., steel teeth 8*l.*; a Samuelson's improved double action haymaking machine, improved and manufactured by the exhibitor, price 13*l.* 13s.; an improved one horse power, improved and manufactured by the exhibitor, price with leading bar and road cover complete, 13*l.*; several sizes of Samuelson's patent Gardner's double action turnip cutter, invented by the late James Gardner, of Banbury, and improved and manufactured by the exhibitor, obtained the first prize at the competitions of the Society's annual meetings in 1849, 1850 (at the Great Exhibition in 1851), 1852, 1853, 1854, 1855, and at the great triennial competition at Chester 1858, price 5*l.* 13s. 6d. and upwards, if without lamb plates 5*l.* 10s.; several sizes of Samuelson's patent Gardner's (all iron) turnip cutter for sheep and lambs, improved and manufactured by the exhibitor, price 5*l.* 7s. 6d.; a patent Gardner's turnip cutter for cattle, invented by the late James Gardner, of Banbury, improved by Alexander and Bernhard Samuelson, and manufactured by the exhibitor, price 4*l.* 10s.; a patent Gardner's turnip slicer, invented by the late James Gardner, of Banbury, improved and manufactured by the exhibitor, price 4*l.* 8s.; a lever turnip slicer, invented and manufactured by the exhibitor, price 1*l.* 15s.; a Samuelson's improved root pulper (No. 2), improved and manufactured by the exhibitor, highly commended at Chester in 1858, price 5*l.* 10s., if with pulley extra; patent root graters, invented by Bushe and Barter, of Lisamore, Ireland, and improved and manufactured by the exhibitor, price 3*l.* 10s. and 4*l.* 5s.; a turnip grater (No. 1), invented by Edmund Moody, late of Maiden Bradley, and improved and manufactured by the exhibitor, price 4*l.* 10s.; a patent cart turnip cutter, invented by Caldwell and McKinnell, of Dumfries, and manufactured by the exhibitor, price 14*l.* 14s.; patent combined root graters and chaff cutters, invented and manufactured by the exhibitor, 6*l.* 10s. and 9*l.*; a Samuelson's Banbury chaff cutter, invented, improved, and manufactured by the exhibitor, awarded the 3*l.* prize at the triennial trials at Chester in 1858, price 13*l.*, if with pulleys extra; several specimens of Corne's chaff cutter, invented by John Corne, sen., of Barbridge, and improved and manufactured by the exhibitor, price 4*l.* 15s. to 12*l.*; a rising mouth chaff cutting machine, improved and manufactured by the exhibitor, price 3*l.* 15s.; an economical chaff cutting machine, price 2*l.* 15s.; and a small chaff cutter, for exportation, invented and manufactured by the exhibitor, price 3*l.* 5s.; several sizes of Samuelson's improved roller mill, for crushing malt, linseed, &c., improved and manufactured by the exhibitor, price 5*l.* to 8*l.* 15s.; a Samuelson's improved malt crushing mill, invented, improved, and manufactured by the exhibitor, price 6*l.* 15s.; a universal corn crushing, or bruising mill, invented by the late Mr. Stratton, of Bristol, improved and manufactured by the exhibitor, price 5*l.* 10s.; bean splitting mills, manufactured by the exhibitor, price 2*l.* 2s. 6d. to 3*l.* 15s.; Samuelson's linseed cake breakers, invented, improved, and manufactured by the exhibitor, price 2*l.* 16s. 6d. to 10*l.* 10s.; a general purpose iron wheel plough, price 4*l.*, if with steel breast 4*l.* 8s.; a Samuelson's strong wrought iron five tine horse hoe, price 3*l.* 10s., and a strong wrought iron three tine ditto, price 2*l.* 16s., manufactured by the exhibitor; a patent turnip thinner, invented by Thomas Huckvale, of Choice Hill, improved and manufactured by the exhibitor, received the Royal Agricultural Society's money prizes, three Bath and West of England Society's prizes, and many local ones, price 7*l.*, with hoes to hoe the whole surface, 8*l.*; a chain harrow, 5ft. by 7ft. 6in., improved and manufactured by the exhibitor, price 3*l.* 3s.; a chain harrow, 7ft. 9in. by 7ft. 6in., manufactured by the exhibitor, price 4*l.*; three sizes of Cartwright's patent chain harrow, invented by J. Cartwright, of Shrewsbury, improved and manufactured by the exhibitor, price 3*l.* 7s. to 5*l.* 15s.; a set of three four-beam diagonal harrows, manufactured by the exhibitor, price 3*l.* 3s. and 4*l.* 4s.; a Crosskill's patent clod crusher, 6ft. by 2ft. 6in., invented by William Crosskill, of Beverley, and manufactured by the

exhibitor, has received many Royal Agricultural Society's and other prizes, price 19l. 10s., without travelling wheels 17l. 10s.; smaller size, price 15l. 10s., if with travelling wheels 17l. 10s.; a Patterson's patent clod crusher, invented by John Patterson, of Beverley, Yorkshire, and manufactured by the exhibitor, price 6ft. long by 2ft. diameter 17l. 10s., if without travelling wheels 30s. less; a Cambridge's press roller, or clod crusher, invented by William Cambridge, of Bristol, and manufactured by the exhibitor, price 7ft. by 2ft. 2in. diameter, 18l.; a Robinson's patent press roller and clod crusher, invented by G. W. Robinson, of Barton-on-Humber, and manufactured by the exhibitor, price 6ft. 9in. long, rings 2ft. 2in. and 2ft. 4in. diameter 17l.; an improved iron frame field roller, 6ft. long by 20in. diam., invented, improved, and manufactured by the exhibitor, price 10l.; a Samuelson's digging machine, invented by B. Samuelson, of Banbury, improved and manufactured by the exhibitor, price 80l.; an Anthony's patent American churn (10 quarts), invented by Charles Anthony, of Pittsburg, U.S., improved by Burgess and Key, of London, and manufactured by the exhibitor, took the Royal Agricultural Society's silver medal at Exeter, a prize medal at the Great Exhibition 1851, the prize at Gloucester 1853, at Carlisle 1855, and at Chester 1858, price 2l. 13s., without stand 2l. 8s.; Samuelson's registered atmospheric churns, invented by B. Samuelson, of Banbury, improved and manufactured by the exhibitor, price 4 quarts 1l. 6s., 8 quarts 1l. 11s. 6d., if on stand 1l. 19s. 6d., 12 quarts 1l. 15s., and 20 quarts 2l. 2s. 6d.; Boyd's patent lawn mowing machines (30in., for pony power), improved and manufactured by the exhibitor, price with packing case complete 13l. 13s., down to (12in.) 4l. 17s. 6d.; several sizes of garden roller, price 3l. 18s. down to 2l.; rustic garden seats, 6 feet long, price 1l. 10s. 6d., 4 feet long, 1l. 6s. 6d.; and wrought iron hand sick barrow, price 13s. 6d.; a 4½ inch galvanised iron pump for liquid manure, improved and manufactured by the exhibitor, price 2l. 5s.; a length of gutta percha suction pipe (10 feet), price 1l. 5s.; a 4½ inch galvanised iron pump, for liquid manure, price 2l.; a length of 10 feet of gutta percha suction pipe, price 1l. 5s.; a winnowing and blowing machine, price 10l. 10s.; a barley hummeller, price 4l. 10s.; a Samuelson's portable mangle, price 4l. 12s. 6d.; and an improved table mangle, price 4l. 10s., all invented, improved, and manufactured by the exhibitor; a Gauntlett's patent chronometrical thermometer, invented, improved, and manufactured by W. H. Gauntlett, of Eaton, Middlesex-on-Tees, price 7l. 10s.; an Archimedian root washer, price 5l.; and a hand drag rake, price 12s., manufactured by the exhibitor; several specimens of solid cast steel hay forks, price 1s. 10d. to 3s. 4d.; a bright pitch fork, price 5s. 4d.; a potato fork, improved pattern, crutch trees, price 3s.; a solid cast steel potato fork, crutch trees, price 4s. 9d.; a three-prong solid cast steel American pattern digging fork, price 3s. 9d.; and a three prong solid cast steel American pattern manure fork, price 3s. 9d., invented and manufactured by W. A. Lyndon, of Birmingham; a galvanised turnip skip, 19 inches, price 4s. 8d.; 21 inches, price 4s. 6d.

THOMAS READ & Co., of 4, Agar-street, Strand, London.

A specimen of sign painting used in exhibition of every description in every variety of materials, size, and colour, warranted to stand any weather; a specimen of writing and gilding on glass for ornamental and decorative purposes, also enamelling and embossing on glass and tablets; a specimen of writing on card-board for prize tablets, explanations and prices of articles, in any colour and size, for frames and waterproof; miscellaneous articles and patterns.

SPENCER, READ, & Co., of 4, Agar-street, Strand, London.

Photographs of machinery, prize cattle, working drawings, &c.

WILLIAM WALLER, of Uddingston, near Hamilton, Lanarkshire, N.B.

(New implements), patent swing ploughs, patented and improved by "Delta," and manufactured for the exhibitor, price with six cast iron shares, exclusive of carriage, 3l. 15s. and 5l. 17s. 6d.; a Scotch swing plough, price 4l. 12s. 6d.; an improved Scotch swing plough (the Clydesdale), improved and manufactured by Robert Law, of Shettleston, price 5l.; a

Scotch plough fitted with wheels, manufactured for the exhibitor, price 5l. 12s. 6d.; an improved two horse swing plough for general purposes, improved and manufactured by Robert Law, of Shettleston, price 3l. 17s. 6d.; (new implement), a patent subsoil plough or pulveriser, patented and improved by "Delta," and manufactured by Robert Law, of Shettleston, price 4l.; a subsoil plough or pulveriser for two horses, manufactured for the exhibitor, price with lever complete 7l. 10s.; a subsoil plough or pulveriser for two horses, improved and manufactured by Robert Law, of Shettleston (awarded the first prizes of the Highland Society in 1857 and 1858), price 7l.; parts of the patent "Delta" plough, patented and improved by "Delta," price 1l. 11s. 6d.; a drill or double mould board plough, manufactured for the exhibitor, price exclusive of carriage 3l. 15s., extra for marker 10s., extra for wheel 7s. 6d.; (new implement), a patent drill plough or double mould board or ridging plough, price without wheel 3l. 10s., with one wheel 3l. 16s. 6d., with two wheels 4l. 4s., extra for marker, chain, and fixings 10s.; (new implement), a patent drill plough with marker, price 4l.; (new implement), a patent potato plough, price without wheel 4l. 7s. (new implement), a patent harrow for one horse, price 2l. 7s. 6d., and (new implement) a patent harrow for two horses, price 4l. 12s. 6d., patented and improved by "Delta," and manufactured for the exhibitor; quoit or chain harrows, invented by Mr. Smith, of Deanston, improved and manufactured by Robert Law, of Shettleston, price 3l. 15s. and 4l. 10s.; a potato or saddle harrow, designed and manufactured for the exhibitor, price 2l. 7s. 6d.; (new implement) a set of patent "Excelsior" harrows, invented and patented by J. Seaman, of Hertford (late foreman to Messrs. J. and F. Howard, of Bedford), and manufactured by J. Blinman, of Hertford (late of N. S., of America), price 4l.; (new implement) a drill grabber and earthing-up plough, in one implement, invented, improved, and manufactured by Robert Law, of Shettleston, price 5l.; a small expanding drill grabber, improved and manufactured by Robert Law, of Shettleston, price 3l. 12s. 6d.; a small three-tined grabber or horse-hoe, price 2l. 16s. 6d., if with wheel 6s. 6d. extra; a light five-tined drill-grubber, price with one wheel 3l. 10s., and a drill grabber, price 4l. 5s., manufactured for the exhibitor; a light field grabber, invented by John Tennant, of Shields, improved and manufactured for the exhibitor, price with one wheel 4l. 15s.; a strong field grabber, invented by John Tennant, of Shields, improved by Robert Law, and manufactured for the exhibitor, price with one wheel 5l. 5s., two front wheels 7s. 6d. extra, two hind wheels 15s. extra, lever for adjusting front wheel 1l. extra; (new implement) a large field grabber on wheels, manufactured for the exhibitor, price 10l. 10s.; a metropolitan washing machine, improved and manufactured by R. L. Allen, of New York, price 3l. 10s.; (new implement) a patent self-acting cheese press, patented and improved by "Delta," and manufactured for the exhibitor (awarded the silver medal of the Ayrshire Agricultural Association, April 26, 1859), price 3l. 3s. to 5l. 18s.; a thermometer churn, improved and manufactured by R. L. Allen, of New York, price 1l. 18s.; (new implement) a curd breaker, improved and manufactured for the exhibitor, price 2l. 15s.; (new implement) a patent cheese-making apparatus, invented by Henry Waller, of Lickhill, and manufactured for the exhibitor, price 12l. 10s.; (new implements) kitchen presses, invented by Mr. Jenks, of New York, and manufactured by R. L. Allen, of the same place, price 18s. to 1l. 15s.; an American beefsteak beater and masher, price 1s. 9d.; (new implement) a patent self-relieving horse-rake for hay or stubble, patented and improved by "Delta," and manufactured for the exhibitor, price 2l. 6s.; an American patent root cutter, invented by Willard, of New York, and manufactured by R. L. Allen, of New York, price 4l. 10s.; (new implement) a hand seed planter for all kinds of grain, or one-row drill, manufactured by R. L. Allen, of New York, price 5l. 17s. 6d.; (new implement) patent folding ladder, price 1s. 3d. per foot, and (new implement) a patent fruit gatherer, price 4s. 6j., manufactured for the exhibitor; (new implement) a patent automaton apple parer, invented and improved by R. L. Allen, of New York, and manufactured by the exhibitor, price 7s. 6d.; (new implement) an apple or potato peeler, price 5s.; tube brushes for portable engines, manufactured for the exhibitor, price 28s. per dozen, or 2s. 6d. each and upwards; a patent scuegee for scrubbing floors, &c., invented by Lumb, and manufactured by Perreux and Co., of London, price 5s. each; a bundle of Canadian hay rakes, manufactured in Canada West, price 1s. 10d. each.

JOHN SMITH, of Coven, near Wolverhampton, Staffordshire.

(New implement) a twelve-horse power locomotive or traction steam engine, invented by John Smith, jun., of Coven, improved and manufactured by the exhibitor, price £201.; (new implement) a steam plough of twelve-horse power, invented by John Fowler, jun., of 28, Cornhill, London, improved by the Steam Engine, Windlass, and Anchor Company, manufactured by the exhibitor, and the ploughs, &c., manufactured by Messrs. Ransomes and Sims, of Ipswich, price 7801.; (new implement) a patent windlass, invented by John Fowler, jun., of 28, Cornhill, London, and manufactured by the exhibitor, price 1051.

HENRY HAYES and SON, of Stamford, Lincolnshire.

An improved Scotch cart (highly commended by the judges of the Royal Agricultural Society at Salisbury, also obtained the prize of the North Lincolnshire Agricultural Society, 1857, and at Grantham, 1858), price 131. 15s.; an improved one or two-horse cart, price 141. 10s., a light spring lorrie or dray, price 301., and an improved pair-horse waggon, price 421. 10s., seat 20s. extra, all invented improved, and manufactured by the exhibitors; (new implement) an improved iron plough, manufactured by T. G. Mason, of Stamford, price with two wheels complete 41. 5s.

THOMAS R. and R. HUNT, of Earl's Colne, near Halsted, Essex.

An improved machine for hulling clover and trefoil seed, invented by Constable, of Cambridge, improved and manufactured by the exhibitors (received the prize of £2 at the Bath and West of England Show, 1855, and the Society's silver medal at Carlisle the same year), price £45; a corn dressing machine, improved and manufactured by the exhibitors, price £8 8s.; one-horse gears, invented, improved, and manufactured by the exhibitors, price £9 9s. and £11 11s.; a hand-power chaff cutter, improved and manufactured by the exhibitors, price £2 12s. 6d.; (new implement) a root pulper, price £4 10s.; a one-row hand-cut drill, price £2 10s.; a seven-row pony drill, price £10 10s.; a bundle of Essex improved scythes (12-inch), price 11s. 6d., and a two-row cup-drill, price £3 3s., all invented, improved, and manufactured by the exhibitors.

RUSTON, PROCTOR, and Co., of Sheaf Iron Works, Lincoln.

An eight-horse power portable steam engine, price £225; a 24-horse power portable steam engine, price £100; a patent price portable combined thrashing and dressing machine, price £115; two sizes of an improved portable grinding mill, price £42 and £34 13s., if fitted with French burr stones £5 5s. extra, and two sizes of an improved portable circular-saw bench, price £14 14s. and £35, all invented, improved, and manufactured by the exhibitors.

CHARLES THOMAS, of Stratford-on-Avon, Warwickshire.

Several specimens of a registered flexible saddle, invented by Mr. A. Newland, of Stratford-on-Avon, and improved and manufactured by the exhibitor, price complete £5 15s. and £6 6s.; a curb Pelham, invented and manufactured by the exhibitor, price, with head and reins complete, £1 8s.; a Hanoverian Pelham, of improved construction, price £1 6s., and an Achilles bit, price 10s. 6d.

THOMAS HITHERLY, of Thrusington, Loughborough, Leicestershire.

A wood and an iron plough, with steel turn-furrows 4 feet long, each with 2 wheels and skim coulters and lap chain, price with steel turn-furrow 4 feet long, with 3 extra cast shares, £3 17s. and £4 17s. 6d., skim coulters 5s. and lap chain 2s. extra, both improved and manufactured by the exhibitor.

THOMAS PERRY and SON, of Highfields Works, near Bilston, Staffordshire.

Several specimens of continuous fencing for sheep, cattle, oxen, and deer, at prices from 2s. to 4s. 1d. per yard, several specimens of wrought-iron hurdles for sheep, oxen, and gardens, some of them game-proof, at prices from 3s. 9d. to 10s. 6d. each; several lengths of strained wire fences

for sheep, oxen, deer, &c., at prices from 1s. 1d. to 2s. 4d. per yard; several specimens of wrought-iron field entrance and park gates, with or without pillars, at prices from £1 12s. 6d. upwards; wrought-iron tree guards at £1 each; game-proof plant guards, price from 18s. to 58s. per dozen; two garden seats, price £1 and £1 5s.; an iron and wire ornamental garden chair, price £2 10s.; a folding garden or camp stool, price 6s. 6d.; a folding stool, price 10s. 6d.; a wrought-iron folding garden, or fishing chair, price 6s.; game-proof wire-netting, price light 1d., strong 1½d., extra strong 2d. per superficial foot; galvanized poultry netting, price from 4½d. to 8½d. per lineal yard; galvanized pheasantry netting, price ½ inch mesh 3d., ¾ inch mesh 2½d., 1 inch mesh 2½d. per foot; sheep netting, price 7½d. and 11d. per yard; iron poultry hurdles, price 5s. 2d. each; two iron wheelbarrows, price £1 7s. and £2 10s.; a wrought-iron clothes post and socket, price 15s.; an iron lifting jack for carriages, &c., price 15s.; a patent sheep-feeding, folding and housing hurdle, price £3 10s.; three wrought-iron sheep troughs, price £1, £1 10s. and £1 15s.; an iron vermin-proof rickstand, price 4s.; an oblong rickstand, price £4 7s. 6d.; a cast-iron rickstand pillar and cap for wood-frame top, price 3s. 6d.; a fire-proof book safe, price £10 10s.; and a fire-proof deed box, price £4 15s., all invented and manufactured by the exhibitors.

PICKSLAY, SIMS, and Co., of Leigh, Manchester, Lancashire.

Several specimens of a chaff-cutting machine, price 21. 5s. to 181.; a gorse, whin, or furze cutter, price 71. 12s. 6d., pulley 9s. extra; (new implement) a combined litter and chaff cutter, price 161. 10s., pulleys 11.; a lined and malt mill, price 41. 15s.; three sizes of a kibbling mill, price 61. to 101., invented, improved, and manufactured by the exhibitors; (new implement) a gorse and grain bruiser, price 121. 12s., invented by John Hardley, of Isle of Wight, improved and manufactured by the exhibitors; a kneading machine, price 51. 5s., invented, improved, and manufactured by Chas. Quinton, of Cheltenham; (new implement) two sizes of a corn mill, price 121. 12s. and 181. 18s., invented by John Hardley, Isle of Wight, improved and manufactured by the exhibitors; two sizes of a turnip slicer, price 41. 18s. 6d. and 31. 18s. 6d., invented, improved, and manufactured by the exhibitors (it was highly commended at Chester, took the first prize at the Royal Scotch Show, Aberdeen, highly commended by the Society's medal at the Royal Irish Show, Londonderry, as no prizes were given, first prize Royal North Lancashire Show, and the first prize at Southport, Horwich, and other local shows); (new implement) a bone mill, price 271. 10s., invented by Rea and Burns, of Liverpool, improved and manufactured by the exhibitors; a root grater, price 51. 5s., invented by Moody, improved and manufactured by the exhibitors; (new implement) four sizes of a patent lawn mower, price 61. 10s. to 71.; a washing, wringing, and mangling machine, price 51. 5s., invented, improved, and manufactured by the exhibitors; and a wringing and mangling machine, price 41. and 51. 5s., invented, improved, and manufactured by the exhibitors; (new implement) a patent mangle, price 111., invented by Baker of London, improved and manufactured by the exhibitors; horse gears, price 181. and 181.; two field roller, price 111. and 141.; garden chairs, price from 16s. 6d. to 21. 10s.; heavy garden rollers, price from 11. 10s. to 41. 17s. 6d.; revolving pig troughs, price from 12s. 6d. to 11. 1s. 6d.; poultry pots, price 2s. 9d. and upwards; a set of rick stand pillars, price 3s. 6d. each; a corner manger, price 5s. 9d.; a corner hay rack, price 6s. 9d.; a flat manger, price 11s. 3d.; a flat hay rack, price 6s. 9d.; an improved manger rack and gruel pot, price 11. 14s.; an improved basin trap for a stable, price 2s. 10d.; and a stench trap, price 1s. 6d., all invented, improved, and manufactured by the exhibitors; a 24-horse engine, price 851., invented, improved, and manufactured by Wm. Cambridge, of Bristol; a 4-horse works, in motion, price 221.; and a chaff-cutter, price 101. 14s., invented, improved, and manufactured by the exhibitors; a gorse and grain bruiser, price 181. 4s., and a corn mill, price 131. 4s., both invented and improved by Hardley, of the Isle of Wight, invented, improved, and manufactured by the exhibitors; a turnip slicer, price 41. 18s. 6d.; smith's water fire irons, price 11. 14s. and 21. 5s.; a set of boakin posts and pillars, price 11. 16s.; and a lawn mower, price 61., invented by E. Budding, improved and manufactured by the exhibitors.

BARTON and SON, of the Crescent Coach Factory, Carlisle, Cumberland.

An unpainted dog car, price 30*l.*; an unpainted car, price 28*l.*; a tandem car, price 24*l.*; a Chester car, price 30*l.*; and a Victoria car, price 28*l.*, all invented, improved, and manufactured by the exhibitors; a border car, price 30*l.*

WILLIAM BROWN and CHARLES N. MAY, of North Wilts Foundry, Devizes.

An 8-horse portable steam engine, price 210*l.* (commended by the judges of the Royal Society last year at the Chester Meeting); a 2½-horse power portable steam engine, price 70*l.*; and (new implement) a patent double-action haymaking machine, price 14*l.* 14*s.*, manufactured by the exhibitors; (new implement) a patent brick-making machine, price 100*l.*; a Waller's patent cheese-making apparatus or tub, price 10*l.*, invented by Henry Waller, of Lickhill, Calne, and manufactured by Messrs. Wilkins, of Calne; a 9-inch patent sluice cock or valve, price 4*l.* 14*s.* 6*d.*; a 2-inch patent ditto, price 1*l.* 5*s.*; and a patent hydrant or street main cock, price 1*l.* 10*s.*, manufactured by the exhibitors; a patent heat indicator, price 18*s.*, invented by C. N. May, of Devizes, and manufactured by George Salter, of West Bromwich.

WILLIAM CULLINGFORD, Ball's Pond-road, Islington, Middlesex.

A sheep-folding net, made of cocoa-nut fibre, 4 feet wide, 200 yards long, 6*d.* per yard; another kind 4*d.* per yard; a lamb-folding net, 6*d.* per yard; a sheep-folding net, made of best hemp, 6*d.* per yard; a bat-folding net, with bamboo poles, complete, price 1*l.*; other kinds down to 5*s.*; a pair of elap nets for catching birds, of all kinds, on the ground, price 1*l.*; with pull line, stop cord, staves, and pegs, &c., complete, price 1*s.* 10*s.*; a spring bird trap, price 7*s.* 6*d.* to 1*l.* 5*s.*; a drag net, price 4*l.* down to 1*l.*; a fine net, price 2*l.* 10*s.*; a casting net, price 15*s.* to 1*l.* 7*s.*; a carp and tench galvanised iron-hooped net, price 15*s.*; an eel net, galvanised iron hoops, price 15*s.*; a hexagon garden net, price 1*l.* 18*s.* 8*d.*; an extra stout small mesh net, 6*d.* per square yard; a square mesh shading net, 8*d.* per yard; a patent wool net, for protecting the blossom of fruit trees, &c. from frost, 8*d.* per yard; a hemp 1-inch mesh new twine garden net, 8*d.* per yard; a ¾-inch mesh hemp garden net, 1*s.* 4*d.* per yard; a 1-inch mesh cotton garden net (any width) 2*s.* 6*d.* per yard; a hare or rabbit net, price 1*l.* 15*s.*; a rabbit net for cover shooting, price 1*l.* 5*s.*; a wire rabbit or poultry fencing net, 5*d.* per yard; a wire sheep and cattle fencing net, 9*d.* per yard.

DAVID THOMAS JONES, of Headless Cross, near Red-ditch, Worcester.

A plough, generally known as the wood and iron plough, price without extra castings, as shares, &c., £8, invented by W. Troth, of Breatly, Warwickshire, and improved and manufactured by the exhibitor; a combined subsoil and ridging plough, price without castings £2 10*s.*, invented and manufactured by the exhibitors.

THE TRUSTEES of W. CROSSKILL, of Beverley Iron Works, Beverley, Yorkshire.

An improved Norwegian harrow, price £15 15*s.*, improved by W. Crosskill, and manufactured by the exhibitors (awarded the silver medal by the Royal Agricultural Society of England at York, and included in the award of the council great medal at the Great Exhibition of 1851); a Ducie drag or Uley cultivator, price £12 12*s.*, steel shares 6*s.* extra, invented by John Morton, of Whitfield, improved by Richard Clyburn, of Uley, and manufactured by the exhibitors (awarded the first prize of £15 at Liverpool, £10 at Southampton, £10 at Shrewsbury and £10 at Newcastle, by the Royal Agricultural Society of England); a patent elod crusher or serrated roller, price £16 10*s.*, or with travelling wheels £18 10*s.*, invented and improved by W. Crosskill, and manufactured by the exhibitors (awarded by the Royal Agricultural Society of England the first prize of £20 and the silver medal at Southampton, £10 at Shrewsbury, the special gold medal at a meeting of the council after the Newcastle meeting, and £2 as the best heavy-land crusher at Chelmsford, also awarded the council great medal at the Great Exhibition of 1851); a plain roller, price £11 1*s.*, and an improved plain roller, price £14 10*s.*, both improved and manufactured by the exhibitors; several specimens and sizes of patent cart wheels and axles, price £5 10*s.* to £8 6*s.*, all improved

by W. Crosskill, and manufactured by the exhibitors (awarded by the Royal Agricultural Society of England the silver medal at Derby and Newcastle); a Newcastle price or model one-horse cart, price £15 15*s.* and under (awarded by the Royal Agricultural Society of England the silver medal at Lincoln, and the first prize of £5 at Newcastle); and a York price one-horse cart, price from £12 10*s.* to £16, all invented and improved by W. Crosskill, and manufactured by the exhibitors (awarded the first prize by the Yorkshire Agricultural Society at York, 1853); an improved rung-sided one-horse cart, price £12 5*s.*, improved by W. Torr, Esq., of Ayleby, and manufactured by the exhibitors; an improved Hannam's harvest cart, price £14 10*s.*, invented by J. Hannam, Esq., of Burcott Park, Oxon, and improved and manufactured by the exhibitors; an improved Bedfordshire one-horse cart, price £14, improved and manufactured by the exhibitors; an improved two-horse cart, price £17, improved by W. Crosskill, and manufactured by the exhibitors; a light one-horse cart, price £12 15*s.*, improved and manufactured by the exhibitors; an improved market cart, price £17 10*s.*, improved by W. Crosskill, and manufactured by the exhibitors; two improved sporting carts, price £18 18*s.* and £25, and a light lorrie or rulley, price £30, all improved and manufactured by the exhibitors; an improved pair-horse waggon, price £29 10*s.* with single shafts or pole, and £32 10*s.* with double break, invented and improved by W. Crosskill, and manufactured by the exhibitors (awarded by the Royal Agricultural Society of England the first prize of £10 at Norwich, £10 at Exeter, £5 at Lewes, and £10 at Gloucester); and improved Yorkshire waggon, price £37 with single shafts, or £39 with deep side and end-boards; and an improved Wiltshire waggon, price £32 10*s.*, both improved and manufactured by the exhibitors; an improved liquid manure or water cart, price £17, or with portable pump and leather pipe £22 15*s.*, invented by W. Crosskill, and improved and manufactured by the exhibitors (awarded the silver medal by the Royal Agricultural Society of England at Cambridge; an improved street watering cart, price £30, or with springs £23 15*s.*, improved and manufactured by the exhibitors; an improved pump, price with seven feet of leather hose and three feet of copper tube £5 15*s.*; and a patent portable farm railway, price 4*s.* per running yard, both invented and improved by W. Crosskill, and manufactured by the exhibitors (awarded by the Royal Agricultural Society of England the silver medal at Norwich and Exeter); (new implement) a new patent portable or endless railway, price £65, invented by Robert Romaine, of 36, Ely-place, Holborn, London, and manufactured by the exhibitors; an Archimedian root washer, price £5 10*s.*, invented by Capt. Carr, improved by W. Crosskill, and manufactured by the exhibitors (awarded the silver medal by the Royal Agricultural Society of England at York); an improved reaping machine, price with two complete knife bars and six extra knives £42, invented by the Rev. P. Bell, of Carmylie, and improved and manufactured by the exhibitors (awarded by the Royal Agricultural Society of England the first prize of 20*l.* at the adjourned trial (two days) of the Gloucester meeting at Pusey, 20*l.* at the adjourned trial (two days) of the Chelmsford meeting at Boxted Lodge, and 6*l.* at Salisbury); an improved corn dressing or winnowing machine, price £8 10*s.*, improved by W. Crosskill, and manufactured by the exhibitors; an improved Yorkshire bone mill for steam or water power, price £165 (awarded the first of 10*l.* by the Royal Agricultural Society of England at Chester); another size, £85; and an improved band or endless saw, price £50, all improved and manufactured by the exhibitors.

CLAYTON, SHUTTLEWORTH, and Co., of Stamp End Iron Works, Lincolnshire.

Two 10-horse power outside double cylinder portable steam engines, price £290 and £295; two ditto 8-horse power, price £250 and £255; two 8-horse power outside single cylinder portable steam engines, price £230 and £235; two ditto 7-horse power, price £215 and £220; two ditto 6-horse power, price £200 and £205 (received the prize of 25*l.* at the Society's meeting held at Norwich in 1859, 25*l.* at Exeter in 1850, and a prize medal at the Great Exhibition of 1851); a ditto 5-horse power, price £180; a 6-horse power fixed steam engine, price exclusive of carriage, brickwork or masonry, but inclusive of fixing, 180*l.*; a ditto 8-horse power, price 200*l.* (received the first prize of 20*l.* at the Society's meeting at Gloucester in 1853); a ditto 10-horse power, price 240*l.*; a combined portable single-blower thrashing, straw-shaking, riddling, winnow-

ing, chaff separating, and barley horning machine, price 100*l*. (obtained a prize of 20*l*. at the Society's meeting held at Lewes in 1852, 20*l*. at Lincoln in 1854, and the first prize of 15*l*. offered by the Society for the best machine of this class at Chester in 1858); a combined portable single-blower finishing machine, price mounted on wood travelling wheels 110*l*.; a ditto double-blower ditto, price 120*l*. (obtained a silver medal at the Society's meeting at Carlisle, 1855, and the first prize of 15*l*. at Chester, 1858; a combined fixed ditto or fixed barn works, price exclusive of carriage and fixing, but inclusive of supporting frame, 118*l*. 10*s*. (received a silver medal and 10*l*. at the Society's meeting held at Lewes in 1852, a silver medal at Gloucester in 1853, 20*l*. at Lincoln in 1854, 20*l*. at Carlisle in 1855, and the first prize of 10*l*. offered by the Society for the best machine of this class at Chester in 1858); three portable grinding mills for steam-power, price 47*l*. 10*s*., 67*l*. 10*s*., and 82*l*. 10*s*. (received the prize of 10*l*. at the Society's meeting held at Norwich in 1849, 10*l*. at Exeter in 1850, 10*l*. at Gloucester in 1853, 5*l*. at Lincoln in 1854, 5*l*. at Carlisle in 1855, and the commendation of the judges at Chester in 1858); (new implement) an improved self-acting circular-saw bench, price with 42*in*. saw 65*l*.; and an improved portable ditto, price 20*l*., all invented, improved and manufactured by the exhibitors; an improved portable straw elevator, price mounted on iron travelling wheels 59*l*., fitted with wood wheels 5*l* extra, invented by James Hays, of Elton, and improved and manufactured by the exhibitors.

JAMES FARDON, of Kenilworth, Warwickshire.

A plough, price 10*l*. 10*s*., invented and manufactured by the exhibitor.

JOHN FOWLER, Jun., of 28, Cornhill, London.

Two sets of 8-horse steam cultivating apparatus, price 455*l*. 10*s*. and 527*l*. 10*s*., and a ditto 10-horse, price 622*l*., invented by the exhibitor, and manufactured by Clayton, Shuttleworth, and Co., of Lincoln, and R. Stephenson and Co., of Newcastle-on-Tyne; a detached windlass, price 280*l*, invented by Edington, of Chelmsford, Essex, improved by the exhibitor, and manufactured by R. Stephenson, of Newcastle-on-Tyne; a set of windlass gears, price 105*l*., invented by the exhibitor, and manufactured by R. Stephenson and Co., of Newcastle-on-Tyne; a balance 2, 3, and 4-furrow Plough, fitted with scarifier irons, price 52*l*. 10*s*., 61*l*. 10*s*., and 81*l*.; a balance 3-furrow plough, price 105*l*.; and a scarifier, price 28*l*., all invented by the exhibitor, and manufactured by Ransomes and Sims, of Ipswich.

BENJAMIN HITTMER, of Fulstow, Louth, Lincolnshire.

A corn-dressing machine, price 9*l*., improved and manufactured by the exhibitor.

LOOMES AND COMPANY, of Whittlesea, Cambridge-shire.

Draining pipes, price 16*s*., 45*s*. and 75*s*. per 1,000, manufactured by the exhibitor; a model roof covered with patent tiles, price 14*s*. per square of 100 feet, invented by Messrs. Norton and Boovie, of London, and manufactured by the exhibitor; a garden border edging (Loomes's cable pattern), price: straight tiles 8*d*., bends 6*d*., if fitted to plan 7*d*. per yard, designed by Edward Loomes, of Whittlesea, and manufactured by the exhibitors; water and sewage pipes, price 3*d*. and 2*d*. per foot; roofing tiles, price: common pan 50*s*., flat pan 60*s*., plain 32*s*. 6*d*. per 1,000, manufactured by the exhibitors.

JAMES HAYES, of Elton, near Oundle, Huntingdonshire.

(New implement) a patent portable straw elevator, price 64*l*.; three sizes of a portable corn grinding mill, price 18*l*. 10*s*. to 51*l*. 10*s*.; and a flour dressing machine, price 18*l*., all invented, improved, and manufactured by the exhibitor.

THOMAS NALDER, of Challow Works, near Wantage, Berkshire.

A portable combined thrashing, shaking, riddling, winnowing, and barley horning machine, price on wood wheels 95*l*., invented, improved, and manufactured by the exhibitor; two specimens of Nalder's patent corn separator and blower, price £8 8*s*. and £9 9*s*., invented by J. H. Nalder, of Alvescott, and improved and manufactured by the exhibitor (obtained a silver medal at the Carlisle meeting, as attached to Clayton and Co.'s combined thrashing machine).

JOSHUA REA and ROBERT BURNS, of Liverpool, Lancashire.

A 4-horse patent bone rasping mill, for steam, water, or horse power, price 72*l*. 10*s*.; a patent bone cutting and rasping mill of 2-horse power, for steam, water, or horse power, price 52*l*. 10*s*. (obtained the special silver medal at Waterford, August, 1857, and at Londonderry, August, 1858, also a prize of 2*l*. at the Manchester and Liverpool meeting in September, 1857); (new implement) a ditto 1-horse power ditto, price 27*l*. 10*s*., all invented by Robert Burns, of Liverpool, improved by the exhibitors, and manufactured by Pickaley, Sims, and Co., of Leigh, Lancashire.

THOMAS SCRAGG, of Calveley, near Tarporley, Cheshire.

A single-action drain tile and pipe making machine, price 20*l*., invented, improved, and manufactured by the exhibitor; six bell socket draining pipe of 2 inch bore, price 18*s*. 6*d*. per 1000; and (new implement) a testing machine to test draining pipes, price 15*s*., both invented and manufactured by the exhibitor; three sizes of six draining pipes of 2, 4, and 6-in. bore each, price 16*s*. 6*d*., 2*l*., and 5*l*. per 1000, manufactured by the exhibitor.

WARREN SHARMAN, of Melton Mowbray, Leicester-shire.

Improved registered tubular iron hand hay and corn rakes, price 16*s*. 6*d*., invented, improved, and manufactured by the exhibitor; wood drag rakes (painted red) with best iron screwed teeth, price 10*s*. and upwards, manufactured by the exhibitor; improved registered tubular iron twitch or garden rakes, price 48*s*. per dozen with shafts, without shafts 42*s*., invented, improved, and manufactured by the exhibitor; jappaned iron and galvanized iron buckets, price jappaned iron 12*s*. and 20*s*., galvanized iron 18*s*. and 27*s*. per dozen, manufactured by the exhibitor; jappaned iron roof or chaff scuttle measures, price 30*s*. to 63*s*. per dozen; (new implement) new-shaped chaff scuttles with double handler, price 96*s*. per dozen; and jappaned and galvanized filling scuttles, price jappaned 30*s*. and 36*s*., galvanized 36*s*. and 48*s*. per dozen, all invented, improved, and manufactured by the exhibitor; ditto iron baskets for farm and household purposes, jappaned 30*s*., galvanized 36*s*. per dozen; a poultry fountain with 2 or 3 outlets, price 10*s*. 6*d*. and 13*s*.; three sizes of a circular corn or flour bin, price 17*s*., 20*s*., and 25*s*.; wrought iron wheel-barrows (two shapes), price 27*s*.; and an assortment of sack trucks, in iron and wood, price 12*s*. iron, 15*s*. wood, all manufactured by the exhibitor; (new implement) a simple and complete hot-water apparatus, for forcing plants and heating green-houses, price 3*l*. 3*s*., invented and manufactured by the exhibitor; a garden chair, with arms and footboard, price 1*l*. 2*s*., manufactured by the exhibitor.

ROBERT T. SMITH, of Whitchurch, Salop.

A combined thrashing machine, price 105*l*., invented, improved, and manufactured by the exhibitor; a six-horse power portable steam engine, price 200*l*., invented, improved, and manufactured by Robert Bach and Co., of Birmingham.

WILLIAM SNOWDEN, of Longford, near Gloucester.

A patent paring plough, complete for all land paring purposes, price 7*l*. 7*s*. (awarded a silver medal by the Royal Agricultural Society in 1858, and received eleven other prizes, medals, and awards from different agricultural societies in the same year); a patent single stubble parer and surface pulverizer, price 5*l*. 10*s*.; (new implement) a patent lever double stubble parer and land pulverizer, price 8*l*. 10*s*.; and (new implement) a patent lever general purpose plough, price 7*l*. 15*s*., all invented by William Woofe, of Western Birt, Gloucestershire, and manufactured by the exhibitor—sole patentee.

MESSRS. AMES and BARFORD, of Queen-street, Peterborough, Northamptonshire.

A Stanley's registered roller mill, for crushing corn, malt, linseed, and for splitting beans, price 12*l*., smaller size 7*l*. 10*s*. (it obtained a medal at the Great Exhibition in 1851, and at the Paris Exposition in 1855, and at more than fifty local shows during the last ten years); and a Stanley's registered farmers' steaming and cooking apparatus, price 17*l*. 10*s*., invented by the late W. P. Stanley, of Peterborough, improved and manufactured by the exhibitors (a prize of 300 francs and a gold medal were awarded to this apparatus at the Paris Ex-

position in 1855); a set of iron outlet pipes, &c., for an improved system of land drainage, price 3*l*. 8*s*. per set (invented by J. Bailey Denton, Esq., of Stevenage, improved and manufactured by the exhibitors); a Cambridge's patent clod crusher, price 10*l*. to 14*l*., invented by W. Cambridge, of Bristol, improved and manufactured by the exhibitors; wrought-iron cylinder land rollers, price 7*l*. to 13*l*.; a two-horse cast cylinder land roller, price 12*l*. 10*s*.; a cast cylinder land roller, price 6*l*.; and (new implement) a new combined sack-barrow and elevator, price 2*l*. 15*s*., all invented, improved, and manufactured by the exhibitors.

JOHN PHILLIPS BARFORD, near Banbury, Oxfordshire.

A patent clod crusher, price 19*l*. 10*s*., invented and improved by William Crosskill, Beverley, and manufactured by Ransomes and Sims, of Ipswich; a patent cultivator or scarifier (wrought iron) price 13*l*., a smaller size 7*l*. (gained the prize of 5*l*. at the Royal Agricultural Society's show at Carlisle, 1855, also a prize of 3*l*. at the Chelmsford show, 1856), invented, improved, and manufactured by R. Coleman, Chelmsford; a Bedfordshire scarifier, price 7*l*. 7*s*., improved and manufactured by the exhibitor; a patent broadshare and subsoil plough, price 6*l*. 16*s*. 6*d*., invented, improved, and manufactured by E. H. Bentall, of Heybridge; a patent one-horse pary, price 7*l*. 7*s*., invented by William Woole, of Weston Birt, and improved and manufactured by Wm. Snowden, of Longford; a solid beam plough with draught rod, and a lighter solid beam plough, price 4*l*. 17*s*. 6*d*. and 4*l*. 7*s*. 6*d*., both invented, improved, and manufactured by Ransomes and Sims, of Ipswich (the latter was awarded the prize of 2*l*. at the meeting of the Royal Agricultural Society at Chelmsford, 1856, as a light land plough); a patent iron plough, price 4*l*. 12*s*. 6*d*., invented, improved, and manufactured by J. and F. Howard, of Bedford (awarded the first prize, for light land, also for general purposes, at the Royal Agricultural Society's meeting at Chelmsford, 1856); a patent plough, price 4*l*. 8*s*., invented, improved, and manufactured by William Ball, of Rothwell; a patent ridge or double breast plough, price 4*l*. 15*s*. (received the Royal Agricultural Society's prize at Chelmsford, 1856), and a patent iron dwarf plough, price 3*l*. 3*s*., invented, improved, and manufactured by J. and F. Howard, of Bedford; a patent Archimedian subsoil plough, price 6*l*. 12*s*. 6*d*., invented by Lord C. Beauchamp, and improved and manufactured by Ransomes and Sims, of Ipswich (this plough received the Royal Agricultural Society's prize at Chelmsford, 1856); a horse hoe, price 3*l*. 5*s*., invented, improved, and manufactured by J. and F. Howard; a steerable horse hoe, price 7*l*, invented by Wm. Smith, of Kettering, and improved and manufactured by the exhibitor; a set of patent four-beam harrows, price 3*l*. 6*s*. (nine first prizes have been awarded to these harrows by the Royal Agricultural Society); and a set of patent jointed harrows, price 4*l*., invented, improved, and manufactured by J. and F. Howard, of Bedford; a set of heavy East Anglian harrows, price 5*l*. 5*s*., invented, improved, and manufactured by Ransomes and Sims, of Ipswich (awarded a prize at the Royal Agricultural Society's meeting at Chelmsford, 1856); a pair of three-beam strong drag harrows, 7 feet wide, price 6*l*., and a patent horse rake, price 3*l*. 10*s*., invented, improved, and manufactured by J. and F. Howard, of Bedford; an improved horse rake, price 5*l*. 10*s*., invented, improved, and manufactured by Ransomes and Sims, of Ipswich (awarded the first prize by the Royal Agricultural Society at Salisbury, 1857); a patent poppy and weed extirpator and fertilising lever harrow, price 9*l*. 9*s*., invented by Frederick Phillips, of Brandon, and improved and manufactured by James Woods, of Stowmarket (awarded the Society's silver medal at the Chelmsford meeting, 1856); a patent double-action and reverse-motion hay machine, price 15*l*. 15*s*., invented, improved, and manufactured by Smith and Ashby, of Stamford (this machine received the first prize offered by the Royal Agricultural Society ten years in succession); a patent double-action and reverse-motion haymaking machine, price 15*l*., invented, improved, and manufactured by W. N. Nicholson, of Newark (awarded the first prize last offered by the Royal Agricultural Society at Salisbury, 1857); a patent corn dressing and winnowing machine, price 13*l*. 10*s*., invented, improved, and manufactured by Richard Hornsby and Sons, of Grantham (this machine has received seven first prizes, and the last offered by the Royal Agricultural Society); a patent corn dressing and winnowing machine, price 14*l*., invented, improved, and manufactured by Joshua Cooch, of Har-

leston (this machine obtained the first prize of 10*l*. at the Liverpool meeting, 1841, also the prize of 15*l*. at the Northampton meeting, 1847); a barley sower, price 4*l*. 8*s*., invented, improved, and manufactured by Holmes and Son, of Norwich; a broadcast clover and grass seed distributor, price 3*l*. 8*s*., improved and manufactured by Barrett, Exall, and Co., of Reading; a ten-row patent corn and seed drill, price 28*l*., invented, improved, and manufactured by Richard Hornsby and Sons, of Grantham (received a council medal at the Great Exhibition of 1851, and five prizes from the Royal Agricultural Society); a patent six-row corn and seed drill, price 19*l*., invented, improved, and manufactured by William Heasman and Son, of Linslade, Beds; a two-row patent drill for dry manure and seeds, price 9*l*., invented, improved, and manufactured by R. and J. Reeves, of Bratton (a silver medal was awarded to this machine at Salisbury, 1857); a patent four-row liquid-manure and seed drill, price 28*l*. 10*s*., invented by Thomas Chandler, of Aldbourn, improved and manufactured by R. and J. Reeves, of Bratton (five first prizes and a silver medal have been awarded to this drill by the Royal Agricultural Society); a one-row hand turnip and mangold cnp drill, price 2*l*. 10*s*., invented, improved, and manufactured by T. and R. Hunt, of Earls Colne, Essex; a patent bean cutter, price 4*l*. (awarded the Society's silver medal at Gloucester); a combined bean and oat mill, price 6*l*. 6*s*., and a patent universal mill, price 9*l*. 10*s*., invented by J. A. Biddell, of Ipswich, improved and manufactured by Ransomes and Sims, of Ipswich; a registered chaff cutter, with three knives, price 13*l*. 18*s*., invented, improved, and manufactured by James Cornes, of Barbridge (awarded the first prize at the Chester show, 1858, and the first prize, 11 years in succession previously, by the Royal Agricultural Society); (new implement) an improved chaff machine, price 10*l*. 10*s*., invented and manufactured by Joseph Gardner, of Banbury; an improved chaff machine, price 10*l*. 10*s*., invented, improved, and manufactured by Richmond and Chandler, of Salford; a chaff machine, price 6*l*., invented, improved, and manufactured by Pickley, Sims, and Co., of Leigh; a patent chaff cutter, price 5*l*. 5*s*., improved and manufactured by Ransomes and Sims, of Ipswich (awarded a prize at the Chester Show); a chaff cutting machine, price 3*l*. 15*s*., invented, improved, and manufactured by Richmond and Chandler, of Salford; a cheap chaff cutter, price 2*l*. 8*s*., improved and manufactured by the exhibitor; an oil cake crusher, for beasts and sheep, price 5*l*., invented by W. N. Nicholson, of Newark, improved and manufactured by the exhibitor; an oil cake crusher, price 4*l*. 10*s*., invented and improved by G. A. Biddell, of Ipswich, and manufactured by Ransomes and Sims, of Ipswich; an oil cake crusher, price 3*l*. 13*s*. 6*d*., invented, improved, and manufactured by E. H. Bentall, of Heybridge; an oil cake crusher, price 2*l*. 16*s*. 6*d*., invented, improved, and manufactured by Bernhard Samuelson, of Banbury; a patent root pulper, price 6*l*. 6*s*., invented, improved, and manufactured by E. H. Bentall, of Heybridge; two patent turnip cutters, price 4*l*. 10*s*. and 5*l*. 13*s*. 6*d*., invented by the late James Gardner, of Banbury, improved and manufactured by Bernhard Samuelson, of Banbury; a turnip cutter, price 5*l*. 2*s*., as originally invented by the late James Gardner, of Banbury, and manufactured by Ransomes and Sims, of Ipswich; a patent double-action root cutter, price 6*l*. 18*s*., invented by G. A. Biddell, of Ipswich, improved and manufactured by Ransomes and Sims, of Ipswich; a patent root cutter, price 4*l*. 10*s*., invented by Edmund Moody, of Maiden Bradley, improved and manufactured by Hugh Carson, of Warminster; a one-horse gear, with intermediate motion, price 13*l*., invented, improved, and manufactured by Ransomes and Sims, of Ipswich; a patent self-relieving chain harrow, price 4*l*. 15*s*., invented, improved, and manufactured by John Cartwright, of Shrewsbury; a patent corn screen, price 7*l*., invented by Robert Boby, of Bury, improved and manufactured by Wallis and Haslam, of Basingstoke; a set of water or feeding pans, price 5*l*. 6*s*., invented and manufactured by Ransomes and Sims, of Ipswich; a set of iron tubular whippetrees, price 1*l*. 1*s*., invented, improved, and manufactured by Ransomes and Sims, of Ipswich; a 3-cwt. weighing machine, and a set of weights to weigh 8 cwt., price 3*l*. 15*s*., invented and manufactured by W. and T. Avery; a 3-cwt. weighing machine, upon the steel-yard principle, price 4*l*., invented, improved, and manufactured by Wm. Chambers Day, of Birmingham; a set of plough harness, price 2*l*., manufactured by the exhibitor; a roll of galvanized bare and rabbit-proof netting, price 3*d*. per running

yard, manufactured by T. P. Hawkins, of Birmingham; a bundle of improved Lincolnshire pitch forks, price 5s. 6d. and 5s. each, invented, improved, and manufactured by Spear and Jackson, of Sheffield; a bundle of cast-steel digging forks, prices, 4 prongs 3s. 9d., 5 prongs 4s. 6d. each; a bundle of American-pattern manure forks, price 4s. 9d. each, and a bundle of American-pattern cast-steel hay forks, prices: 4 ft. 1s. 10d., 4 ft. 6 in. 2s., 5 ft. 2s. 1d., 5 ft. 6 in. 2s. 6d., 6 ft. 6 in. 3s., improved and manufactured by W. A. Lyndon, of Birmingham; a hand drag rake, price 11s., manufactured by Francis Stevenson, of Liddington; an iron sack cart or barrow, price 12s. 6d., manufactured by the exhibitor; an engine jack, price 21. 10s., invented and manufactured by W. Gilpin, senr., and Co., Walsall; and a water-cock of cast-iron, price 7s. 6d., invented and manufactured by Gidney and Sons, of Dereham.

BENJAMIN HEEL, of Warwick.

Various sizes of an improved barrel churn, price 21. 7s. to 31. 10s., improved and manufactured by the exhibitor. A curd tub, price 11. 12s., a pair of whey civers, price 21. 10s., a butter civer, price 10s. 6d., and a pair of milking buckets, price 11s. (all English oak), and a box cheese vat, with moveable bottom, price 5s., manufactured by the exhibitor.

HUGHES and SONS, of Great Dover-street, Borough, London, s.e.

Two French runner mill stones, for grinding wheat, price 121. 10s. and 141., a French bed stone, for grinding wheat, price 121., a flour dressing machine, price 61., an iron proving staff, price 31. 3s., a mahogany staff, price 11. 10s., and a set of double and treble iron blocks, with brass sheaves, price 21. 10s., improved and manufactured by the exhibitors.

GEORGE KENT, of 199, High Holborn, London.

Five specimens of (new implement) a Griffiths' patent compound-action churn, price 21. 7s. 6d. to 51., several specimens of Griffiths' patent compound-action whisk, price 11. 10s. to 41. 5s., invented and patented by E. P. Griffiths, of Camberwell, improved and manufactured by the exhibitor (a silver medal was awarded by the Royal Agricultural Society of England, at the Chester Exhibition, July 21, 1858). Several sizes of Kent's patent rotary knife-cleaning machine, price 31. 3s. to 141. 14s., invented, patented, improved, and manufactured by the exhibitor. A Kent's patent rotary cinder sifter, price 31. 3s., invented, patented, and manufactured by the exhibitor. Two Kent's patent triturating strainers, price 11. 7s. 6d. and 11. 17s. 6d., invented, patented, improved, and manufactured by the exhibitor. A Kent's patent improved washing dolly, price 21. 10s., invented by Mr. Andrews, of the United States, improved, patented, and manufactured by the exhibitor.

THOMAS LYNE, of Malmesbury, Wiltshire.

A patent field stile, price 21., invented and manufactured by the exhibitor. A set of general purpose patent lever harrows, for light land, price, whippetree and weights included, 51., a set of patent lever general-purpose harrows, for heavy land, price, weights and whippetrees included, 51. 5s., and a set of lever drag harrows, price 61. 10s., all invented by the exhibitor, and manufactured by John Sealy, of Corston.

PEYTON and CLARKE, Anchor Forge, Birmingham.

Best tempered cast-steel garden spades, price 3s. to 4s. each; best country shovels, price 2s. 6d. to 3s. 6d. each; best cast-steel grafting tools, price 3s. each; best cast-steel draining tools, price 3s. 3d. each and upwards; best cast-steel gravel shovels, price 2s. 9d. each and upwards; best cast-steel road shovels, price 2s. 6d. each and upwards; best steeled garden spades, price 2s. 3d. each and upwards; best country shovels, price 1s. 9d. each and upwards; casting tools, price 2s. 9d. each; Sutton pattern shovels, price 2s. each and upwards; London treaded spades, price 1s. 6d. each and upwards; London treaded shovels, price 2s. each; Hereford pattern spades, price 2s. 6d. each and upwards; Cheshire socket spades, price 2s. 9d. each and upwards; Cheshire socket shovels, price 2s. 9d. each and upwards; Irish spades, price 2s. 9d. each; Scotch spades, price 2s. 6d. each; Welsh spades, price 2s. 9d. each; Bristol street shovels, price 1s. 6d. and 2s. 6d. each; Cornish miner's shovels, price 1s. 9d. each and upwards; Devonshire and other shovels, of every size, shape, and variety, from 2s. each and upwards; carpenter's Kent axes, price 1s. 9d. and 2s. 6d. each; steel-polled felling axes,

price 3s. 3d. each; every kind of axe for all descriptions of trade, from 1s. 6d. each and upwards; common hatchets, price 6d. each and upwards; hedge hooks, or Nottinghamshire bills, price 1s. 6d. each and upwards; Staffordshire-pattern bill hooks, price 1s. 6d. each and upwards; furze-hooks, price 2s. 8d. each and upwards; every other kind of hook for country use, from 1s. 4d. each and upwards; Macadamising hammers, with handles, price 1s. each; sledge hammers with handles, price 4s. 9d. each; a bundle of pick-axes, price 2s. 6d. each and upwards; English pattern mat-tacks, price 2s. 6d. each; road picks, price 3s. each; a bundle of hop kerfs, price 2s. 6d. each and upwards; adzes, hoes, &c., &c. at every price, and all improved and manufactured by the exhibitors.

RICHARD HORNSBY and SONS, of Spittlegate, near Grantham, Lincolnshire.

Several specimens of an improved patent iron plough, price with two wheels £4 7s. 6d. and upwards, skim coulters and drag chain 7s., steel breast 6s. extra; an improved patent colonial swing plough, price £4, skim coulters and drag chain 7s., steel breast 7s. 6d. each; a 12-horse power patent portable double cylinder steam engine, price £360 (received the first prize of £25 at the Royal Agricultural Society of England's meeting at Chester, July, 1858); a 10-horse power patent portable steam engine, price £275; a 9-horse power ditto, price £255 (the Council Medal was awarded to R. H. and Sons' engine at the Great Exhibition, 1851: received the following first prizes of the Royal Agricultural Society of England—viz., £20 at Lincoln, 1854, £10 at Gloucester, 1853, £40 at Lewes, 1852, £50 at Exeter, 1850, and £50 at York, 1848); an 8-horse power ditto, price £235; an 8-horse power horizontal fixture steam engine, price £205 (the prize of £10 was awarded at the Royal Agricultural Society's meeting at Chester, July, 1858), all invented, improved, and manufactured by the exhibitors; a Bourdon's improved steam pressure gauge, price £4 5s., invented and improved by M. Bourdon, of Paris, and manufactured by Messrs. Dewrance and Co., of London; a patent portable combined thrashing, shaking, and dressing machine, for preparing corn for the finishing dressing machine, price £95, if with patent travelling axles £5 extra (received the first prize of £20 of the Royal Agricultural Society, at Carlisle, 1855); another size price £110, if with patent travelling axles £5 extra; an improved patent fixture combined thrashing, shaking, and dressing machine, for preparing corn for market, price £120, if with weighing machine £7 10s. extra; a patent corn-dressing and winnowing machine, price £18 10s. (the Council Medal was awarded to this machine at the Great Exhibition, 1851: it has also received the following first prizes from the Royal Agricultural Society of England—viz., £5 at Chester, 1858, £5 at Lincoln, 1854, £5 at Gloucester, 1853, £10 at Lewes, 1852, £10 at Exeter, 1850, £10 at Norwich, 1849, £10 at York, 1848, and £3 at Newcastle, 1846); another size, price £12 (which received the first prize of £5 from the Royal Agricultural Society of England, at its trial of this class of machinery, at Carlisle, 1855, as well as the first prize of £5 at its meeting at Gloucester, 1853), invented, improved, and manufactured by the exhibitors; a portable corn-grinding mill, for steam power, price £39 10s., invented and improved by exhibitors, and manufactured by the exhibitors and Messrs. Bloom and Chalkers; an improved machine for breaking oilcake for beast and sheep, price £5 5s., (received the Council Medal of the Great Exhibition, also the first prize of £5 at the Lewes meeting of the Royal Agricultural Society of England, 1852, £5 at Shrewsbury, 1845, £5 at Southampton, 1844, and £5 at Derby, 1848); a portable circular-saw bench, price £35, and smaller size £15; a drilling machine, for corn, seed, and general purposes, price, complete with manure box, coulters, &c., fitted for general purposes, £42 5s. (received the following first prizes from the Royal Agricultural Society of England—£5 at Salisbury, 1857, £10 at Lincoln, 1854, £10 at Lewes, 1852, £15 at Norwich, 1849, £15 at York, 1848, £15 at Newcastle-upon-Tyne, 1846, £15 at Shrewsbury, 1845, £10 at Derby, 1843, £30 at Bristol, 1842, and £25 at Liverpool, 1841); a patent drill for turnips, mangold wurtzel, and manure, price £29 12s. (received Council Medal at the Great Exhibition, 1851; the first prize of £5 when fitted both as a ridge and flat surface drill, at the Royal Agricultural Society's meeting at Salisbury, 1857, £5 at Lincoln, 1854, £10 at Lewes,

1852, £10 at Exeter, 1850, £10 at Norwich, 1849, and £10 at Shrewsbury, 1845); a 10-row patent corn and seed drill, price £27 (received the Council Medal at the Great Exhibition of 1851, and the following first prizes from the Royal Agricultural Society of England—£10 at Carlisle, 1855, £10 at Lincoln, 1854, £10 at Gloucester, 1853, £10 at Lewes, 1852, £10 at Exeter, 1850); an improved patent fore-carriage steering, price £4 10s. (received the prize medal of the Royal Agricultural Society of England, at Exeter, 1850); a 12-row patent corn-drill, price £28 10s.; a 13-row patent corn drill, price £30, and a patent small occupation drill, price £19 5s., all invented, improved, and manufactured by the exhibitors, (the latter has received the Royal Agricultural Society's first prize of £2, at Salisbury, 1857, £5 at Carlisle, 1855, and £10 at Lewes, 1852.)

EDWARD HUMPHRIES, of Pershore, Worcestershire.

A portable combined thrashing, shaking, riddling, barley horning, winnowing, and sacking machine, price £98 and upwards, invented, improved, and manufactured by the exhibitor; a 6-horse power portable steam engine, price £200, invented, improved, and manufactured by Clayton, Shuttleworth, and Co., of Lincoln; a portable clover machine, price £85; an improved winnowing or corn-dressing machine, price £12 10s.;

a patent riddle for combined machines, price £3, and a pair of cider press screws, price £6, invented, improved, and manufactured by the exhibitor; a six-bar gate, price £1 4s.; and a five-bar gate, price £1 4s., invented, improved, and manufactured by Emanuel Smith, jun., of Pershore.

CHARLES POWELL, of Titchhurst, Hurstgreen, Sussex. (New implement)—an implement styled the "Multum in Parvo," price £7 7s.; (new implement)—a manure distributor for artificial manures, price £18 18s.; a seed dibbler or planter, price £3 3s.; a bean dibbler or planter, price £3 15s.; a general dibbler for beans, wheat, peas, mangold, &c., price £3 16s.; a general seed dibbler or planter for Lois Weedon husbandry, price £3; and a Sigma hoe, price £1 5s., all invented by "Sigma," and manufactured by the exhibitor.

MANNING PRENTICE, of Stowmarket, Suffolk.

A cereal manure, price £8 10s. per ton; a mangold manure, price £8 per ton; and a patent turnip manure, price £6 10s. per ton, invented, improved, and manufactured by Thomas Prentice and Co., of Stowmarket; a superphosphate of lime, price £6 per ton and upwards; asphalt flooring, price, for $\frac{1}{2}$ inch, 1s. 6d. per square yard, fuel and sand being provided by employer, all manufactured by Thomas Prentice, of Stowmarket.

(To be concluded in our next.)

THE OLD NORFOLK FARMER AT WARWICK.

DEAR SIR,—On proceeding to the ground on Monday morning, I found that the operations had been adjourned to another field separated from the former one by a narrow slip of meadow land. There were only three competitors who had removed their ploughs, &c., namely, Fowler, Smith, and Roby, the others having withdrawn from the course, thereby fully justifying the opinion I expressed last week, that the trials had for the most part proved a failure. The new land was of a medium quality, inclining to clay, but with a mixture of gravel. The subsoil, however, was a very strong clay or brick earth, but the implements did not penetrate so deep as to enter it, except in one instance, which I shall presently refer to.

Fowler's plough was placed between Smith's cultivator and his own, and turned over its four furrows satisfactorily. The rise of the hill-side was tolerably steep, so as to test both the strength of the rope, the power of the engine, and the capability of the plough-frame to retain its position. The curve of the land, which the plough followed, was considerable, which added greatly to the strain on the wire rope, but did not break it. I do not know what quantity of ground was allotted to each implement, but from the rapid manner in which Fowler's plough ascended and went down the hill-side, I should say that fully seven acres per day was the rate at which it performed its work.

Smith's cultivator "smashed" up the ground, at the instigation of its inventor, in fine style; but the fault we referred to last week is fatal to its economic use. I refer to the necessity of passing twice over the ground, which nearly doubles the work, or at least so far lengthens the time of the operation as to make its use very expensive. I question whether, with a ten horse-power engine, more than four acres per day can be properly cultivated. In other respects it did its work well, and passed over ground that no plough could have touched. For instance, there was a clay-pit in the middle of the portion of land selected by him on that account: it had been partly filled up, but had still an incline on all sides of 1 to $\frac{1}{4}$, or fully 30 per cent. Through this pit the cultivator passed with ease,

"smashing" up the clay in grand style, without missing or slurring over any part of it.

Upon reflection the mode of working of Fowler's cultivator, it appears to me is not altogether unsatisfactory. It certainly cuts up the sod completely, at one operation, and so far I consider it has the advantage of Smith's. But on the other hand, it neither "smashes" nor breaks it, nor even turns it over, so that if a shower of rain falls, the grass would instantly strike root again. Besides, being unbroken, or at least, very little broken by the cultivator, the harrows would have great difficulty in pulling it in pieces. These objections I consider as serious, by affecting the utility of the implement.

With respect to Chandler and Oliver's (Roby's) plough, it did not appear to me to be strong or heavy enough for the work, nor was the amount of work performed adequate to the power employed. Its only redeeming feature was that what work it did, was very well done. Owing to its peculiar construction, the engine may be placed in any part of a field, the drums being fixed to the fore-part of the engine, and the wire-rope passed through pulleys attached to anchors the same as Smith's.

I am glad to find that the judges have re-considered the character of Smith's machine since last year, and have "highly commended" it. There is no dispute amongst practical men about the claim of Fowler to the prize of £50: no other machine in the field did the work so efficiently or to so large an extent in a given time; but with regard to the actual economy of time and money in its working, you know my opinion on that score, and I need not repeat it. I still consider that the power of steam has yet to be applied to the land, or rather to agriculture, in a much more efficient and economic manner.

To me it is a source of vexation to see so large an amount of money expended upon schemes, which a small amount of common sense and knowledge of agriculture might convince the inventors that they will be useless. Thousands are thus wasted that would be otherwise profitably employed in forwarding really useful experiments, which are thus thrown into the back-

ground for want of funds. Such are many of the schemes for the cultivation by steam, which at present is but in an incipient form, and cannot be said to be fairly launched. A short time will convince the public that some more efficient system is required to give to steam-power in agriculture that development it has acquired in other departments of industry.

I had the pleasure of witnessing one most valuable machine worked by steam. I refer to Fowler's draining plough, which appears to me to be a completely successful application of steam power. No landlord ought to be without one for the benefit of his tenants, for certainly its operation would be as advantageous to himself as to them. Mr. Eddington, the engineer, assured me that any proprietor of one of these machines would be able to drain his land four feet deep and sixteen feet apart for 10s. or 12s. per acre exclusive of the tiles. This is a really large economy of labour and money, for the same work could not be done by the spade at less than five or six pounds per acre. Every one was pleased with the working of this plough, and could see at a single glance that it does the work in a most efficient manner. The engine is an eight-horse power, and is specially constructed to stand against the enormous strain occasioned by drawing the tiles into the tubular orifice at the same time that it is made by the mole of the machine.

I went on Wednesday morning to see the operation of the mowers. There were three machines at work, namely, Messrs. Burgess and Key's Allen's American patent, Harwood's of Stowmarket, and Wood's Clayton's patent. The first bore away the prize without any controversy, except amongst the proprietors. It cut the grass as close and as regularly as if it had been shaved with a razor. What rendered it still more the favourite, was the ease with which, owing to the simplicity of its construction, the horses walked off with it, as if they had nothing behind them. Harwood's machine was not equal in working to Burgess and Key's; and it appeared to me that the blade was too long, being 5 feet 6 inches, whilst that of Burgess and Key's was only 4 feet 6 inches. This certainly must have rendered it harder for the horses, who accordingly appeared a good deal distressed with the work. In other respects the grass was cut unequally, some well, other parts left rough. With regard to the third machine, it regularly left a wad three inches high all over the ground, with many tufts much worse. I went over the ground this morning after the field had been cleared, and could tell to an inch where each machine had been worked. This, in fact, is the best time to judge of the work, it being impossible whilst the hay is scattered over the field to form an adequate opinion. In the present case, however, there was no room for doubt as to which was the best machine. At the same time I would recommend Mr. Harwood to shorten his blade from six to twelve inches, and see whether that would not improve the working.

There was one implement which I think ought to have received more attention from the judges than they paid to it. This is Hancock's plough, which has three shares, one before and above the other. The first takes two inches of the sod, and turns it over into the furrow; the second takes two inches more, which it throws over the first; the third takes two to four inches, and completes the work. By thus dividing the six or eight inches into three portions, it becomes broken and pulverized sufficiently to form an excellent seed bed. I examined the work of this plough to-day. It is on a farm of Mr. Dickenson, and is confessedly the worst piece of clay soil in the county. Some other ploughs had worked by the side of Hancock's, and the superior state in which his plough left the land could be seen as soon as you enter the field. Yet the judges took no notice of it, and

even would not allow the plough to be left at the head of the work, but ordered it to be taken out of the field, although every other was so allowed to be left. This is not even-handed justice, and if persisted in will bring the Society into discredit.

Yours, &c.,

Warwick, July 16th. AN OLD NORFOLK FARMER.

THE ATTENDANCE AT WARWICK.—The Royal Agricultural Society registered the admission of 1,689 persons, at 2s. 6d. each, to the implement yard only, on Tuesday (yielding £210 17s. 6d.), against 1,251 admitted on the opening day at Chester last year. On Wednesday there was separate entrance to the cattle yard, into which 3,376 persons entered, at 5s. each, paying £844 18s. 6d.; whilst 5,154 persons paid £644 for entrance to the other department, many, of course, paying for both. At Chester, last year, 3,180 persons were registered at the implement yard, and 4,887 at the cattle yard. On Thursday last, 19,902 entered the show-yard, the number on the corresponding day at Chester being 24,790. On Friday the attendance, although a shilling-day, was but 25,446.

THE WARWICK MEETING.—Mr. Moony, a large stockholder in Victoria, has purchased the first prize Hereford bull, class II., of Mr. Naylor, and the first prize Hereford heifer, class V., of Lord Berwick, for shipment to Melbourne.

DEATH OF MR. HUDSON, THE LATE SECRETARY OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—Mr. James Hudson died on the morning of Tuesday, the 28th of June, within one week of his formal dismissal from office. He had, however, been seriously indisposed for a considerable time, and was known of late to have been gradually sinking. He was in the fifty-sixth year of his age. Mr. Hudson succeeded the late Mr. William Shaw, as Secretary of the Royal Agricultural Society, in the year after the opening meeting at Oxford in 1839. He entered upon the duties of this appointment with the highest testimonials in his favour, having previously held for nine years the office of assistant-secretary and librarian to the Royal Society at a salary of three hundred per annum. He withdrew from the Royal Society in November, 1834, having during the year previous received the public thanks of that Society, accompanied by a present of twenty guineas, "for the able manner in which he drew up the report on the adjudication of the Society's medals." He is still well remembered and spoken of by the Fellows as a very efficient officer. It will be seen from this that the Council of the Royal Agricultural Society were thoroughly justified in the selection they made, and for many years their expectations were amply realized. Mr. Hudson quite sustained his character as an efficient officer, and until very lately no man could have been more respected. Indeed the recent proceedings were such as to utterly astound many of his friends, although it was known to some that he had long been in difficulties. An effort, in fact, was made, we are told, a year or two since, to save him; but from something like a positive disinclination on his own part, it was not proceeded with. He leaves a widow and a very large family. Rumour puts the amount of the defalcations at something like two thousand pounds; but we shall prefer awaiting the official declaration of the Council on this point.

MR. SANDAY'S ANNUAL LETTING OF LEICESTER SHEEP AT HOLME PIERREPONT.

An event which has now come to be regarded with great interest in the agricultural year took place at Holme Pierrepont, on Wednesday last—namely, the annual letting of Mr. Sanday's Leicester sheep. There was an exceedingly good attendance of agriculturists, including several of the best farmers and flockmasters of the kingdom, and the proceedings of the day passed off in a most spirited manner. Notwithstanding the annually increasing number of breeders against whose skill and experience Mr. Sanday has to contend, he continues to sustain, in a remarkable manner, the high reputation he has made for himself in that most important branch of agriculture to which he has devoted his attention, and, as we stated last week, he has again carried off a large portion of the prizes awarded to Leicester sheep, at the recent show of the Royal Agricultural Society, at Warwick. This circumstance, together with the interest always felt in Mr. Sanday's annual shows, which are exceedingly agreeable reunions, drew around that gentleman on Wednesday a larger company than on any previous occasion. The master occupied most of the morning, but the bulk of the visitors arrived about noon; and soon after one o'clock, the guests were invited to Mr. Sanday's hospitable board, that gentleman giving them individually a most hearty and cordial welcome. The luncheon—an excellent cold collation, with abundance of wine,—was well served up, and the company fully evinced their appreciation of it.

Amongst the company present we observed the following:—Mr. Marshall, Cotgrave; Mr. Thunder, Meath, Ireland; Mr. Turner, Barton, near Exeter; J. Mann, Esq., Huntingdon; Mr. Hewitt, Dodford, Northamptonshire; Mr. Bosworth, Dishley; R. Horton, Esq., Sherbourn, Warwickshire; Mr. Cobb, steward to Sir Chas. Mordaunt; Level Cowley, Esq., Rugby; Mr. Shaw, Stembery Hill, Northampton; John Wedge, Esq., Fernhill, Northampton; James Singleton, Esq., Parkington; John Borton, Esq., Barton-le-Street, near Malton; C. Clarke, Esq., Hilltop, near Lincoln; Charles Clarke, Esq., Scopwick; Messrs. Stater, Carlton, near Lincoln; Mr. Sellers, Thorpe Bassitt, Malton; Mr. James Somerville, Steward to Col. Ling, Thorpe Hall, Tamworth; Mr. Clarke, Lincoln; John F. Johnson, Esq., Enderby, Leicester; Mr. Mann Tremain, Cornwall; Mr. Owen, Blessington, Ireland; Mr. Hurlstone, Heathcote Farm, Warwick; Mr. Torr, Riby, Lincolnshire.

After the repast, W. Torr, Esq., of Riby, Lincolnshire, proposed in highly complimentary terms the health of their worthy host, whom he said he regarded as the most successful breeder of Leicester sheep in the kingdom. Mr. Sanday, in returning thanks, expressed his sense of the honour done him by Mr. Torr and the gentlemen present, and his desire to retain the good opinion they were pleased to entertain of him. He assured them that it afforded him the highest gratification to find himself surrounded by so many eminent agriculturists from various parts of the country, and he trusted he should have the pleasure of meeting them all again next year, and that he should be able to produce a show of sheep alike worthy of their approbation, and of the character they had been kind enough to give him as a breeder.

The health of Mrs. Sanday was next proposed, and

drunk with enthusiasm, Mr. Sanday returning thanks in a few appropriate remarks.

At the conclusion of the proceedings at the luncheon, the company proceeded to the show yard, where a ring for the exhibition of the animals was prepared, and the auctioneer, Mr. Strafford, of London, having assumed the hammer, the business of the day commenced with the letting of the shearlings, which were offered in the order of the catalogue. Of these 26 lots were disposed of, the highest price obtained being 90 guineas, and the average price £34 6s. This latter was a considerable advance in the average prices realised last year, which was £22 12s. 6d. The two shears were next brought to the hammer, consisting of 10 lots, of which the best realised 61 guineas, and the average price was £30. Five lots of these shears were disposed of, the highest price being 51 guineas, and the average £30 9s. A four-shear ram made 25 guineas, and two five shears realised respectively 10 guineas and 17 guineas.

Both before and after the sale the company availed themselves of the opportunity of inspecting the excellent arrangements of Mr. Sanday's farm, and in examining his short horns, of which he possessed some fine specimens.

The following is a list of the prices:—

SHEARLINGS.

- No. 1.—By M., dam by G., Mr. Smith, Ireland.
- No. 2.—By W. X., dam by M. U., Mr. Smith, Ireland.
- No. 3.—By G. N., dam by L. N., Mr. Smith, Ireland.
- No. 4.—By G. N., dam by L. N., Mr. Smith, Ireland.
- No. 5.—By M., dam by A. Y., Mr. Richard Hewitt, 15 gs.
- No. 6.—By M., dam by L. N., Mr. Abrahams, 30 gs.
- No. 9.—By M., dam by W. H., Sir C. Mordaunt, 10 gs.
- No. 10.—By M., dam by G. W., Mr. Marshall, 10 gs.
- No. 11.—By M., dam by G., Lord Carrington, 21 gs.
- No. 12.—By M., dam by G., Col. Pennant, 38 gs.
- No. 13.—By G. N., dam by M. U., Mr. Wright, 18 gs.
- No. 14.—By W. X., dam by No. 3, Mr. Wedge, 18 gs.
- No. 15.—By W. X., dam by C. S., Mr. Wedge, 30 gs.
- No. 16.—By G. N., dam by C. S., Col. Pennant, 47 gs.
- No. 17.—By G. N., dam by W., Mr. Clarke, 26 gs.
- No. 18.—By G. N., dam by C. S., Mr. Hall, 24 gs.
- No. 19.—By G. M., dam by L., Sir C. Mordaunt, 16 gs.
- No. 20.—By G. N., dam by D. Y., Mr. Hall, 50 gs.
- No. 21.—By G. N. dam by C. S., Mr. Hall, 30 gs.
- No. 22.—By W. X., dam by Mr. Hewitt, Mr. Hall, 28 gs.
- No. 23.—By W. X., dam by M. U., Mr. Wedge, 28 gs.
- No. 24.—By G. N., dam by A. Y., Mr. Owen, 40 gs.
- No. 25.—By W. X., dam by G. Mead and Gard, 47 gs.
- No. 26.—By G. N., dam by W., Mr. Torr, 70 gs.
- No. 27.—By G. N., dam by A. Y., Mr. Thunder, 90 gs.
- No. 28.—By G. N., dam by No. 3, Mr. Shaw, 35 gs.

TWO SHEARS.

- No. 1.—By G. N., dam by Y. Mr. Hall, 10 gs.
- No. 2.—By C. S., dam bred by Mr. Buckley, Mr. Cowley, 20 gs.
- No. 6.—By C. S., dam by G. W., Mr. Hurlstone, 22 gs.
- No. 7.—By C. S. dam by D. N., Mr. Hall, 10 gs.

No. 11.—By G. N., dam by D. U., Mr. Shaw, 50 gs.
 No. 12.—By G. N., dam by W. H., Mr. Biddle, 24 gs.
 No. 14.—By G. N., dam by L. S., Mr. Turner, 21 gs.
 No. 17.—By C. S. dam by M. U., Mr. Thomas
 Simpkin, 26 gs.
 No. 18.—By G. N. dam by L., Mr. Hall, 42 gs.
 *No. 19.—By G. N., dam bred by Mr. Buckley, Mr.
 Borton, 61 gs.

THREE SHEARS.

No. 2.—By M. U., dam by Y., Col. Inge, 10 gs.
 No. 5.—By M. U., dam by D. H., Mr. Wood, 22 gs.
 No. 6.—By C. S., dam by No. 3, Mr. Simpkin, 12 gs.

No. 7.—By G., dam by L., Messrs. Slater and Clarke,
 50 gs.
 No. 8.—By M. U., dam by Y. H., Mr. Longfield,
 51 gs.

FOUR SHEARS.

No. 5.—By M. U., dam by Y., Mr. Stamper, 25 gs.

FIVE SHEARS.

No. 1.—By L. S. dam by No. 3, Mr. Borton, 10 gs.
 No. 3.—By W. H., dam bred by Mr. Buckley, Mr.
 Turner, 17 gs.

* No. 19 to be let after the 10th of October.—
Notts. Guardian.

WEIGHTS AND MEASURES.

A BILL PREPARED AND BROUGHT INTO PARLIAMENT
 BY MR. JOHN LOCKE, MR. HUTT, AND MR. BUXTON,
 TO AMEND THE ACT OF THE FIFTH AND SIXTH YEARS
 OF KING WILLIAM THE FOURTH, CHAPTER SIXTY-
 THREE, RELATING TO WEIGHTS AND MEASURES.

Whereas it is expedient that the Act passed in the ses-
 sion holden in the fifth and sixth years of the reign of King
 William the Fourth, chapter sixty-three, intituled "An Act to
 repeal an Act of the fourth and fifth years of his present
 Majesty, relating to weights and measures, and to make
 other provisions instead thereof," should be amended: Be
 it therefore enacted by the Queen's most excellent majesty,
 by and with the advice and consent of the Lords spiritual
 and temporal, and Commons, in this present Parliament
 assembled, and by the authority of the same, as follows:

I. No person shall sell or offer or expose for sale, or cause
 to be sold or offered or exposed for sale, any wheat, barley,
 oats, rye, beans, peas, or other similar corn, grain, or pulse,
 by any local or customary weight or measure, or otherwise
 than by the imperial measure of capacity, or by the sack of
 four imperial bushels, or by the quarter of eight imperial
 bushels; but nothing herein contained shall prevent the
 selling or offering or exposing for sale any wheat, barley,
 oats, rye, beans, peas, or other corn, grain, or pulse by the
 imperial measure, or by the sack of four imperial bushels, or
 the quarter of eight imperial bushels, with a guarantee of
 the weight thereof at the time of such sale or offering or
 exposing for sale; and all bargains, sales, and contracts
 made or entered into for the sale of any such wheat, barley,
 oats, rye, beans, peas, corn, grain, or pulse, otherwise than
 as aforesaid, shall be null and void.

II. No model or copy of any of the imperial standards of
 weights shall be deemed legal, or used for the purpose of
 enforcing the provisions of this Act or the Act passed in the
 session holden in the fifth and sixth years of the reign of
 King William the Fourth, chapter sixty-three, unless the
 same have been compared or reverified by the Comptroller-
 General or some other officer of the Exchequer duly author-
 ized, within three years before the time when it is so
 used; and no model or copy of any of the imperial stan-
 dards of measures shall be deemed legal or used for the pur-
 poses aforesaid unless it have been compared or reverified
 as aforesaid within six years before the time when it is so
 used.

III. No person shall wilfully or knowingly make or sell,
 or cause to be made or sold, any false or unjust beam, scale,
 or balance, or any light or unjust weight or measure; and
 every person who shall commit any such offence shall upon
 being convicted thereof forfeit and pay any sum not
 exceeding ten pounds as shall be adjudged by the justice,
 sheriff, or magistrate before whom any such conviction
 shall take place.

IV. It shall be lawful for every inspector of weights and
 measures, or other person or persons duly appointed to
 inspect weights and measures, at all reasonable times to
 inspect all beams, scales, and balances, and weights and
 measures, in the possession of any person selling, offering,
 or exposing for sale any goods on any open ground, or in
 any public street, lane, thoroughfare, or other open place;
 and if upon such inspection or examination any such beams,
 scales, and balances, or weights and measures, shall be found

light or unjust, or otherwise contrary to the provisions of
 this Act or the herein-before recited Act, the same shall be
 liable to be seized and forfeited, and the person or persons
 using or having in his or her possession any such false
 or unjust beams, scales or balances, or light or unjust
 weights or measures, shall be liable to any penalty not
 exceeding five pounds.

V. It shall be lawful for the owners or managers of any
 public market where goods are exposed or kept for sale, and
 they are hereby required, to provide proper beams, scales,
 and balances, and weights and measures, or other machines,
 for the purpose of weighing or measuring all goods sold,
 offered, or exposed for sale in any such market, and to depo-
 sit the same at the office of the clerk or toll collector of
 such market, or some other convenient place, and to have
 the accuracy of all such beams, scales, and balances, and
 weights and measures, or other machines, tested at least
 twice in every year by the inspector of weights and mea-
 sures of and for the county or district where any such mar-
 ket is situate; and all expenses attending the purchase
 thereof, and for adjusting and testing the same, shall be
 paid out of the monies collected for tolls in such market;
 and such clerk or toll collector shall at all reasonable
 times, whenever called upon so to do, weigh, measure, or
 examine all goods brought to him for that purpose, and
 which shall have been sold, offered, or exposed for sale in
 any such market, upon payment of such reasonable sum or
 sums of money as shall from time to time be decided upon
 by the said owners or managers.

VI. It shall be lawful for every clerk or toll collector of
 any public market, and they are hereby required, at all
 reasonable times, to weigh, measure, or examine all goods
 sold, offered, or exposed for sale in any such market; and
 if upon such weighing, measuring, or examination any such
 goods shall be found deficient in weight or measure, or
 otherwise contrary to the provisions of this Act or the
 herein-before recited Act, every such clerk or toll collector
 is hereby authorized and required to summon the offender
 or offenders before any justice, sheriff, or magistrate having
 jurisdiction in the county or district where any such market
 is situate; and every such justice, sheriff, or magistrate
 shall, upon proof thereof, convict the offender or offenders
 in the respective penalties by this Act or the said recited
 Act imposed, and shall from time to time award to any
 such clerk or toll collector such reasonable remuneration
 (to be paid out of the said penalties) as to him shall seem fit.

VII. For every offence against or disobedience to the
 provisions of this Act or the herein-before recited Act for
 which no special penalty is provided, the offender shall, at
 the discretion of the justice, sheriff, or magistrate before
 whom any such conviction shall take place, be liable to any
 penalty not exceeding five pounds, as shall be adjudged by
 such justice, sheriff, or magistrate.

VIII. This Act shall be constructed and together with
 the said recited Act of the fifth and sixth years of the reign
 of King William the Fourth, so far as the provisions of the
 same are consistent herewith: Provided always, that
 nothing herein contained shall be construed or taken to
 apply to any action or proceeding now pending or which
 may be commenced previous to this Act coming into operation.

IX. This Act shall not extend to Ireland.

CALENDAR OF AGRICULTURE.

This is the general harvest month in Britain, except in the extreme northern parts, where it is protracted into next month. Cut grain crops fully ten days before dead ripeness: the straw will be more juicy, and the flour will be whiter and more doughy. Wheat is cut by hand sickle, placed in shocks of twelve sheaves, and built in ricks. Oats and barley are most generally mown by scythe, laid into swathes for several days, turned over to be dried, tied into sheaves, and placed in shocks. These grains are carried loose as hay, but sheaves suit better the thrashing machine. Peas are cut by hand, and rolled into heaps to be dried. In fine weather every exertion and pains must be used in getting the crops cut and carried. Hire plenty of hands, and allow sufficient beer to the poor labourers. A sparing parsimony in harvest is the worst-judged economy that can be practised.

Clear thoroughly, by hoeing and scuffling, all drilled and green crops; earth-up potatoes; and pull by hand the tall weeds that may afterwards arise.

Lay lime, dung, and composts on wheat fallows. Harrow the lime immediately, and cover the dung

by ploughing—both operations going on together, or following each other as closely as possible. Continue draining, the folding of sheep, and the soiling of cattle, as before directed.

Keep the lambs always in forward condition by placing the young animals on the best pastures. The drafted flock of last year will now be ready for the butcher; and ewes may be put to the ram for early lamba.

Sow, on well-prepared ground, and in sheltered situations, the seeds of drum-head cabbages, kohlrabi, savoy, and broccoli, for plants to be used next spring. Sow rye and winter vetches for early spring use. Use dung for the vetches, or what may be better in many situations, summer-fallow the land, using dung at the same time, thus adopting every possible known means to secure so valuable a crop in the spring.

Burn ashes, and prepare constantly all kinds of artificial manures for the drop drill. Gather dung of all kinds; earths for composts; and vegetables for the manure pits. No person will ever do much in farming who does not apply manures with a constant lavish and an unsparing hand.

CALENDAR OF GARDENING.

Sow the main crops of turnips in drills, with an inch or two of good manure, and a pint of bone-dust to each barrow, three inches directly below the intended row: these drills ought to be struck in ridges formed by taking a little of the earth from the spaces between them. Choose an open plot of ground outside the garden, for turnips rarely prosper within it. Hoe and thin the plants as they grow, till at last they stand about nine inches apart, and two feet from row to row.

Sow cabbages for spring by the middle of the month. Experience may direct an earlier sowing, even in July.

Sow winter prickly spinach and endive in the second or third week.

Sow the hardier sorts of lettuces, carrots, and onions for spring, and all the other vegetables omitted in July, excepting the legumes.

Plant cauliflowers under glasses or in frames.

Apples, pears, or espaliers are pruned in the spring and summer growths, except the foremost leading shoot, to cause the swelling of fruitful buds at the base.

Make fresh plantations of strawberries.

Re-pot and dress auricula plants, and pot-off seedlings. In moist weather, during the latter months, transplant or introduce all kinds of evergreens.

PROPERTIES OF DEW.—The chief facts to be accounted for are these: 1st, Dew (as distinguished from small rain or the moisture produced by visible fog) is never deposited except on a surface colder than the air. 2nd, It is never deposited in cloudy weather; and so strict is its connection with a clear sky, that its deposition is immediately suspended whenever any considerable cloud passes the zenith of the place of observation: 3rd, It is never copiously deposited in a place screened or sheltered from a clear view of the sky, even if the screen be of very thin material, such as muslin or paper suspended over it. 4th, It is most copiously deposited on all such bodies as are good radiants and bad conductors of heat, such as grass, paper, glass, wool, &c.; but little or not at all on bad radiants, such as polished metals, which are also good conductors. And, lastly, it is never deposited if there be much wind. All these circumstances, as Dr. Wells has shown, point to the escape of heat from the bodies exposed by radiation out into space, or into the upper and colder regions of the air, faster than it can be restored by counter-radiation or by conduction from the contact with the warm air or with solid substances—wind acting in this respect with great efficacy, by continually renewing the air in contact. Hoar-frost differs only from dew by being frozen in the moment of deposition, and therefore secreting in crystalline splendour. *—Encyclopædia Britannica, New Edition.*

AGRICULTURAL REPORTS.

GENERAL AGRICULTURAL REPORT FOR JULY.

The unusually high temperature experienced during nearly the whole of the month has ripened the crops with astonishing rapidity; but we regret to find that the heavy thunder-storms experienced on several occasions have been productive of considerable damage to the wheats, which, in many parts of England, have been extensively laid; so much so, indeed, that a great additional expense has to be incurred in harvest work, arising from the comparatively tedious process of cutting crops matted together. It will have been observed that, during the last two months, the wheats, with only few exceptions, have exhibited a most luxuriant appearance, and that they have grown too fast to withstand deluging rains—such as have fallen within the last few weeks. The extent of the damage thus sustained cannot yet be accurately ascertained; but, no doubt, a large portion of the aggregate yield has suffered to some extent; hence, its market value is reduced several shillings per quarter. The few samples that have made their appearance in the different markets have shown signs of a want of condition—in some instances, they have proved thin and light; but our impression is, that, in the event of a dry atmosphere during the remaining portion of the season, future samples will show a different result, notwithstanding that numerous reports of rust, mildew, &c., have reached us from most of our leading counties. We believe, in point of fact, that an immense quantity of wheat has been grown this year—certainly considerably in excess of 1855; but, of course, we have reason to believe that there is considerable unevenness in the weight and quality, especially in those districts in which the greatest damage has been sustained by the late heavy rains. The growth of barley is turning out somewhat thin and steeley—a few parcels of the primeest crop having been sold in Mark-lane as low as 26s. per qr.; but, on the whole, we think that the actual yield is by no means a deficient one. Oats are turning out remarkably well, and the produce of both beans and peas is somewhat in excess of many previous estimates. Taking the crops collectively, we may, we think, safely assume that, as to quantity, they are fully up to most seasons, and that, in a general sense, there is not much room for complaint. The growth of straw must not be omitted in this report. Everywhere, it is wonderfully abundant; consequently, prices may be expected to rule low for several months. We now come to the consideration of the hay crop. Within a circle of, say, fifty miles round the metropolis, nearly double the quantity of hay has been secured compared with 1855. The crop in 1857 was the largest ever grown in this country: and, this year, it is nearly, or quite, equal to that quantity. The supply in other portions of the country has turned out a very large one, and it has been chiefly secured in the best possible condition. For the stock farmers, these are most important considerations, since they have now abundant supplies of both hay and straw to meet their wants during a period when great scarcity is frequently complained of, and during which prices too often rule very high.

The return to a state of peace in Italy, and the continued influx of rather large supplies of foreign produce, added to the large return of this season's crops in England, have had a most depressing influence upon the demand for all kinds of wheat. Up to about the 19th of the month, prices rapidly gave way—

no disposition was shown on the part of the millers to operate—and great difficulty was experienced in effecting sales, even at the reduced currency. In the last fortnight, however, the trade somewhat recovered from the extreme depression, and prices advanced from 1s. to 2s. per quarter, but the advance was paid with much reluctance by the dealers. Spring corn has commanded very little attention, on lower terms, even though the supplies brought forward have been only moderate. In reference to the stocks of produce of last year's growth now in the hands of the farmers, we may observe that those of wheat are unquestionably large—quite as large, indeed, as at the corresponding period last year; but those of barley, oats, beans, and peas are trifling in the extreme. If, therefore, the new crop of wheat turns out as large as we anticipate, there is hardly room for any important advance in the quotations, more especially as the grain trade is now set free in the westward, so far as Austrian grain-laden ships are concerned.

Very conflicting reports have been current in reference to the potato crop. In some counties it is very badly reported, in others that rot is general. From what we have lately seen of it, we believe that a portion of the growth has been lost; but at the same time, when we take into account the immense extent of land cultivated with potatoes this year, we think that the deficiency will not have so much influence upon prices as has been anticipated, more especially as both wheat and rice are likely to be selling at very moderate quotations. The crops of nearly all kinds of fruit have turned out very limited this season. In different quarters some descriptions have proved a failure, and there is scarcely any supply for winter consumption.

The heavy rains have been productive of great benefit to the swedes, mangolds, and turnips, which at one time were suffering severely from the want of moisture, and it is to be hoped they have so far recovered as to yield a full average supply.

Notwithstanding that nearly 100,000 bales of colonial and foreign wool will be brought to the hammer at the public sales now in progress, the wool trade, under the influence of an improved continental demand, and of a low range in the value of money, has shown more firmness, and prices have advanced 1d. to 1½d. per lb. A large quantity of English wool has found buyers at 1d. per lb. more money, although the quantities on offer have considerably increased.

The bine having shown signs of great improvement, the hop trade has become heavy at drooping currencies, and the duty has been done as high as £250,000. The supply of yearling and old hops in the hands of the factors is still very large.

In Ireland and Scotland the crops have made good progress towards maturity. No serious complaints have come to hand in reference to their probable yield, but it is stated that potatoes are much diseased in some quarters. The grain trade generally has continued in a very inactive state, on easier terms.

There has been a fall in the value of beasts throughout the kingdom, and some inactivity has prevailed in the demand for other kinds of stock. On the whole, however, prices have been fairly supported.

REVIEW OF THE CATTLE TRADE DURING THE PAST MONTH.

Notwithstanding that the supply of pasture food has been tolerably abundant, and that comparative inactivity has prevailed in the trade generally, the supplies of fat stock on offer in the Metropolitan Cattle Market, since we last wrote, have been seasonably large. In their general quality there has been a decided improvement, and, for the most part, both beasts and sheep have died well for the butchers. The commencement of the northern district arrivals shows that we may expect some very fine bullocks from that quarter during the present season; and the near-conclusion of the supply from Norfolk has been marked by steady receipts, both as to number and quality; indeed, a better "eastern" season has seldom been known than the past. The present value of beasts in most of our markets leaves a positive loss to those who purchased store animals at high quotations. Sheep, lambs, calves, and very prime pigs, however, are selling at what may be termed fair—possibly, remunerative—prices. The present state of trade will, we are of opinion, continue for several months. Supplies may be large; but we doubt much whether they will be in excess of the consumptive demand, which fairly promises to be extensive, now that money is cheap, that we have peace on the Continent, and that trade and commerce generally are in a flourishing state. Some remarkably fine heifers have been received during the month from Ireland. They have consisted chiefly of short-horns, and, in many instances, realised as much as £23 10s. each. The arrivals of stock from the sister island are now beginning to exercise considerable influence upon the value of meat in the London market.

As regards the importations from abroad, we may observe that those of sheep have been on an extensive scale, and that those of other kinds of stock have been tolerably good. The annexed figures show the arrivals into London:—

Beasts	2,324 head.
Sheep	22,633 "
Lambs	2,657 "
Calves	2,361 "
Pigs	872 "
Total	30,847 "
Same time in 1858	31,192 head.
" 1857	26,958 "
" 1856	30,537 "
" 1855	22,680 "
" 1854	22,242 "
" 1853	38,795 "

The total supplies of stock, including those given above, exhibited in the London market, have been as follows:—

Beasts	19,600 head.
Cows	476 "
Sheep and lambs	166,032 "
Calves	3,609 "
Pigs	2,480 "

COMPARISON OF SUPPLIES.

July.	Beasts.	Cows.	Sheep & Lambs.	Calves.	Pigs.
1858...	20,468	547	154,932	4,262	3,290
1857...	19,558	530	142,280	3,830	2,395
1856...	18,589	500	135,650	3,407	3,225
1855...	16,702	535	149,470	2,757	4,000

The month's arrivals from Lincolnshire, Leicestershire, and Northamptonshire have amounted to 7,000 short-horns and crosses; from Norfolk, Suffolk, Essex, and Cambridgeshire, 3,600 Scots, shorthorns, and crosses; from other parts of England, 4,000 of various breeds; from Scotland, 930 Scots and crosses; and from Ireland, 490 oxen and heifers.

Owing to the prevailing hot weather very little meat has been on offer in Newgate and Leadenhall markets; hence, the consumption of London has been almost wholly met by the

live trade. Beasts have sold at from 2s. 10d. to 4s. 6d.; sheep, 3s. 2d. to 5s.; lambs, 4s. 8d. to 6s.; calves, 3s. 8d. to 4s. 8d.; and pigs, 3s. 2d. to 4s. 8d. per 8 lb. to sink the offal.

On the whole, the health of the stock in our leading grazing districts has continued good; very few losses of importance have resulted from disease, and there is now an abundance of food even on what may be termed poor land.

Advices from Holland are to the effect that the general condition of the stock is improving. The arrivals into London from that country have materially improved in condition, now that the customs' regulations have become more severe; and it is understood that future shipments will be on a somewhat liberal scale. From Germany large numbers of sheep—wholly merinoes—continue to reach us; but they still exhibit a scarcity of flesh, even compared with their comparatively small frames. These sheep can hardly pay the graziers, when it is considered that they are worth only from 21s. to 25s. each in our markets, and that meat is a dear commodity in most parts of Germany. Yet they come in large numbers, but without, of course, adding much to the available supply of food in this country.

CUMBERLAND.

Since the year 1826 there has been no season to approach the present one for a long-continued and severe drought. Since the middle of April there has been no rain of any consequence even to damp the parched earth, only a slight shower now and then, not sufficient to penetrate to any depth, and had little or no effect on vegetation. There has been no appearance of a change of weather until to-day. After a great deal of thunder and lightning during the night, it began to rain early in the morning, and has now continued several hours to rain heavily, which will help to cool the earth and stimulate vegetation. The wheat-crop is the only one that has any pretensions to being good. Not so bulky in straw as in former years, it is, notwithstanding, a fair crop, and will probably yield well, and the grain be of good quality and early ripe. Barley, where very early sown, is a tolerably fair crop; but where late got in, will be extremely deficient. Oats are an exceedingly short crop, very deficient in straw, and are ripening too fast, and will be very light in the grain. There are many fields too short to shear, and so thin that little more than the seed will be produced. There was never a worse prospect for green crops. Mangel-wurzel is a total failure, having almost entirely missed; and where any (with very rare exceptions) have come, there is only here and there a plant, which will be but a poor apology for a crop. Little better can be said for swede turnips, as the weather was too dry to allow the seed to vegetate; and when they did come up, after some of the slight showers, they were immediately eaten up by the fly. Mangel, too, when it vegetated and made its appearance above-ground, raised the hopes of the farmer, which were doomed to be disappointed, as it no sooner showed itself than it was immediately eaten off by a species of worm. Common turnips, where got in after some of the partial showers, braided pretty well; but the continued drought has considerably checked their growth, and the fly has committed ravages on them also, but not to the extent as upon the swede. The hay crop is necessarily very deficient, especially some old grass land or meadow, and where resting upon a clay subsoil it is generally worst. Sown grasses, where not much eaten during winter and on good loamy soil, have turned off a pretty fair crop; but in general the crop is a very poor one. The pastures are so bare and burned brown that it appears wonderful how cattle or stock of any kind can live upon them, and, although doing badly, yet they appear better than could be expected on looking at the pastures; but neither cattle nor sheep can get fat, and the want of keep causes the markets to be glutted with half-fat animals, which cannot find customers, and it is difficult to see how either the summer or succeeding winter is to be got over, from the scarcity of fodder and failure of the green crop. The excessive drought has all along been accompanied with a comparatively low temperature with a long continuance of east wind, which has added much to the effect of the long-continued dry weather.

Not only grass and other crops, but even thorn hedges, in some situations, have been obliged to yield to its intensity, and the leaves become drooping and shrivelled. Wheat has receded in price until it is now almost as low as before the rise at the commencement of the war. Barley, though relatively better in price than wheat, is still low as compared with oats, which command the best price, in proportion to other kinds of grain, and the present appearance of the oat crop would seem to forebode a continued high range of prices for oats. There is much reason to fear that grass-seeds sown with the wheat will have suffered (if much of it is not destroyed) for want of moisture to give it root-hold. Potatoes are complained of, for being small and scabbed, and the stems of some are drooping and withering, as if about ripe. Wool is bringing a good price, and will, in some measure, assist in making up for the loss by sheep not getting fat. Beef and mutton maintain their price pretty well, but the market is much deranged by the glut caused by stock being taken to market for want of keep.—July 19.

ESSEX, NEAR CHELMSFORD.

Since our last report the effects of atmospheric disturbance upon the crops has been very great. The exceedingly high temperature that prevailed from the 10th to the 20th forced them on to rapid maturity, and harvest commenced to a limited extent on the 18th. On the 21st heavy rain with thunder commenced, which has intervened more or less to the present time, and much retarded harvest operations. The crops are consequently much beaten down, the barley especially, and in some localities the hail that accompanied the thunder-storms has literally thrashed some of the crops. Mildew has increased to some extent, and altogether the fine appearance previously reported has considerably diminished. A full average crop of wheat, barley, and oats may be, however, calculated upon, but the quality (especially of barley) will suffer considerable deterioration; and if the weather should continue showery next week the lodged portion will undoubtedly, as in last season, become sprouted. Harvest will have pretty generally begun in the ensuing week, but the extra labour requisite to house the crops will not readily be found. Turnips and mangel-wurzel requiring the hoe have already received considerable injury from the delay, the fine showers, however, compensating by the extraordinary growth that has followed them. Potatoes become daily more and more diseased, and should the tubers unfortunately suffer with the haulms, the crop will inevitably be greatly reduced in value. Feed will now be restored, the pastures already resuming their healthy green appearance. Notwithstanding the apparent forwardness of the crops, harvest will not become general before the middle of the ensuing week. Those fields of wheat already begun have proved that the grain is not so forward as was anticipated, and during the last few days scarcely any progress in ripening has taken place.—July 23.

HEREFORDSHIRE.

We were visited on Wednesday and Thursday last by very severe thunder-storms, which did much damage. The swede turnips in some fields are swept away, and the wheat is, in places, as though it had been rolled. Such was the deluge of rain that fell on Wednesday that a wheelbarrow filled with stones was carried by the flood for some distance along the street. For some days before the storm the heat had been intense, the grass was burnt up, and all vegetation seemed at a standstill; but since the rain all nature appears refreshed. Harvesting has commenced, and if the weather becomes settled will shortly be general. We fear, owing to the absence of showers, and the extreme heat, the wheat will not be very plump, and the yield of that which is laid we must expect to be light. Potatoes continue very good, and there is no doubt of the crops being heavy. Barley (where it is not laid), oats, beans, and peas are spoken well of, and some of the former has been out. At Ross fair, yesterday, things were rather on the decline, but wool fetched a good price, say 17d. to 18d. per lb. A great many horses were on offer, and such as were superior readily found purchasers, at high figures. There was a large business done in pigs, which are rather on the decline. At Messrs. Bradstock and Wigmore's annual ram sale, on the 13th instant, the prices averaged from £6 6s. to 30 per head, the whole being sold.—July 22.

HEREFORDSHIRE.

(FROM ANOTHER CORRESPONDENT.)

The extreme heat that we have experienced during the past seventeen days, unaccompanied by any moisture, has so forced all kinds of our corn crops, that we find ourselves busily engaged in corn harvest before the hay has all been secured; the latter has, up to the present time, been put together in first-rate condition, which will, in some measure, compensate for the lightness of the swathe. In several parts of the county reaping has commenced, and will be very general on Monday next (weather permitting). Several fields of peas are secured and some barley cut. Our wheat crop is about an average—certainly much lighter than the last two years—and this, with a very great decrease in the acreage planted, will render the supply from this county much less than for several years past; for, although in the gasetted returns of corn sold we appear not to grow a tithe of the quantity consumed in our own county, yet weekly there are many thousand bushels sent per rail and canal to distant parts of the kingdom, so much so, that it frequently happens that we have great difficulty in obtaining trucks, such is the fallacious system under which our tithe averages are regulated. Our beans and peas are clean and well corned, but premature ripeness will, we think, render the corn small; the barley crops are generally good. Our turnips and swedes have been greatly injured by the black caterpillar, and were suffering from drought until yesterday, when we were visited by a violent thunder-storm, and to-day we have had a few genial showers, a most desirable change, both for the roots and pastures. All kinds of stock met a slow sale at our Ross fair, yesterday, owing to the shortness of keep.—July 21.

SOUTH SHROPSHIRE.

The heavy thunder storm of yesterday has laid all the heavy and even moderate crops of grain of all descriptions, thereby increasing the expense of cutting, and decreasing their value to a serious extent. Even with fine weather for the harvest, scarcely an average crop of wheat can now be reckoned upon. Some early-sown crops of barley and oats will be ready for cutting next week; in fact, fields of winter oats have already fallen under the scythe. But little or no wheat will be ripe before the 1st of August. The winter beans are a very heavy crop, and will be ready to begin cutting in about a week. Hay making is nearly completed, and although the crops were not heavy the quality is excellent; seldom indeed have we had a more favourable season for harvesting it. The dry forcing weather has produced a great effect upon the pastures, which are short, and burnt in some places. Since the 28th of June no rain of any consequence has fallen till yesterday. The crops of potatoes are promising, with few symptoms of disease at present. There is a prospect of fair crops of mangolds and swedes, though the latter in certain localities have been attacked with the black caterpillar, and some damage sustained. An abundant supply of beef and mutton in the market has naturally lowered the price of these articles; and summer grazing, so far, has not been a very remunerative business.—July 21st.

AGRICULTURAL INTELLIGENCE, FAIRS, &c.

ATHERSTONE FAIR.—There was very little business done; the stock was very small, and so was the number of purchasers. Beef and mutton sold at about 7d. per lb.

BEDALE FORTNIGHTLY FAIR.—We had a small supply, especially lean stock, owing probably to Topcliffe Fair being held the previous day. Sales were very slow, and holding stock rather lower. Beef, 6s. 6d. to 7s. 6d. per stone; mutton, 6d. to 6½d. per lb.

BRIDGNORTH FAIR.—The show of cattle and sheep here was very much smaller than expected, and business sales very dull. Fat beasts for the knife went at 6½d. to 6¾d. per lb. Sheep sold from 7½d. to 7¾d. per lb. Cows and calves, 8d. 10s. to 15s. Pigs from 5d. to 5½d. per lb. In the horse fair there were a few hacks and some agricultural horses, but little or no business done. In the wool trade prices fully

maintained 17½d. to 18d. per lb., and in request at the latter sum.

CAITHNESS GEORGEMAS FAIR.—Nearly three-fourths of the whole stock of cattle and about half the sheep shown were driven off unsold. Of cattle there might be about 500 head on the ground, chiefly two-year-old crosses and stims. There were very few black Highland cattle, and scarcely any milch cows. The fall on the best descriptions of stock, as well as on the more inferior, would be nearly 15 per cent. from the prices prevailing last year. The highest price obtained on the market for two-year-olds was 157, against 181, for the same description of stock last year. Of sheep there were reckoned to be on the ground about 7,000 head, mostly cross-hoggs. Among them were a great many shots—the top being shipped during the season; but upon the whole the quality of the sheep might be said to be about equal to most past seasons. From the absence of dealers, however, and a want of sufficient competition, holders, in order to effect sales, had to submit to a reduction of 3s. a-head upon last year's prices. The average price of cross hoggs might be put down at 30s. each, and lambs at 17s. The Lochend and Castlehill stock topped the market. Mr. Purvis, jun., sold the Lochend hoggs at 36s., and the Castlehill hoggs at 35s. each. The horse market was exceedingly dull, notwithstanding that a number of fine young animals were shown. Except a few aged cart-horses, which were picked up at various prices of from 51. to 101., the only good beast we saw sold was a two-year-old draught colt belonging to Mr. Davison, Coghill, which brought 261.

CAMELFORD FAIR was well supplied, and nearly 3,000 lambs changed hands, varying in price from 16s. to 22s. At the bullock fair a better show of cattle was never seen, but in consequence of the long drought and great scarcity of grass, sales were very limited, only about 160 changing hands, and many of these not until late in the evening.

DUNSE LAMB FAIR.—The supply of lambs was considerably smaller than last year. There was a good demand, and sales were readily effected at higher prices than at Cornhill Fair last week. Almost the whole were disposed of. Bred lambs brought from 22s. to 25s.; three-parts-bred from 20s. to 22s. There were very few half-bred lambs; the price, however, may be quoted at from 18s. to 20s. 6d. There was a small show of sheep, which met with a fair demand at 6d. to 6½d. per lb. Several lots of lean cattle were in the market, but very little business was done in them.

BXETER FAIR.—There was a good supply of fat stock, and prices had a downward tendency. Trade, however, ruled dull. Best beef, 10s. to 10s. 6d. per score; cows and calves, 121. to 161. steers, 101. to 151.; working oxen, 151. to 201. each.

HORSHAM LAMB FAIR.—We had about 12,000 lambs. They were nearly or quite all sold, and the price ranged from 16s. 6d. to 22s. per head. There were a great many horses in the fair, and trade was rather dull with them and with horned cattle. The long continued dry weather has made the after-grass short, and buyers were less eager to purchase in consequence.

KNIGHTON FAIR.—Sheep brought 6½d. to 7d. per lb. Pigs were, in fact, nowhere in price. Horses of a useful character found purchasers at good prices.

OVERTON FAIR.—The supply of lambs was under the average, that of ewes and wethers about the usual number. The trade was dull and hanging during the early part of the day, but ultimately a clearance was effected at about last year's prices. Lambs from 21s. to 36s., extra 38s. to 40s.; ewes, 30s. to 45s.; one superior lot belonging to Mr. Francis Budd, of Hatch Warren, realising 55s.; wethers, 35s. to 45s.

PETERBOROUGH FAT STOCK MARKET, (Wednesday last.)—Though we were well supplied with stock, yet as there were also many buyers the trade for Beasts and Sheep was tolerably brisk at full prices. Beasts (80), 7s. 6d. to 8s. per stone; Sheep (850), 6d. to 7½d. per lb. Pigs flat.

SALISBURY FAIR.—About 1,000 sheep were penned. There was a larger attendance of buyers than at any previous fair, and the whole changed hands at prices slightly in advance of those obtained at Stockbridge. In fact there were more buyers than sellers. Lambs realised from 22s. to 28s.; one

lot fetched 35s.; ewes from 30s. to 40s.; and wethers from 32s. to 45s. The prize lot were sold at 50s. The show of horses was very good, and the animals realised high prices.

SHERBORNE FAIR.—The supply of stock was small, and business was slack on account of the shortness of keep. There were about 2,000 sheep penned. Down lambs sold at from 18s. to 25s. each, in their wool. Wethers from 25s. to 26s. per head; ewes from 25s. to 30s. each. Mutton and lamb 7d. per lb. Beef 10s. to 11s. per score. A very short supply of Devon steers and oxen, there being only about 60 on offer; of these but few were sold. There was rather a large number of Irish yearling heifers, and steers of a better quality than formerly, but very few were sold. Cows and calves also met a dull sale. There were over 200 pigs for sale: barren sows fetched from 45s. to 50s. each; stores from 18s. to 32s.; inferior stores 10s. to 12s. A great many were driven away unsold. The horse fair was a small one. There were a few good cart colts and cart horses; the trade was very slack; high prices were asked for the best animals, but only a few found customers. Some cart horses were sold at from 351. to 401. each.

SHREWSBURY FORTNIGHTLY MARKET.—The best fat heifer beef sold readily from 6½d. to 7d. per lb.; inferior cows under that figure. Fat calves 6d. per lb. Cows and calves selling at fair prices, also store cattle, considering the dry season. Fat wether sheep from 6½d. to 7d.; ewes 6½d. Fat lambs from 18s. to 25s. each. Pigs altogether lower in price.

ST. BOSWELL'S LAMB FAIR.—The stock was not so extensive as it has been for many years past, and was hardly in the same condition as last year. It was principally composed of three-parts bred sheep; also a few lots of bred and half-bred lambs. There was a fair turn out of hoggs—both bred and a few Cheviots, which were in tolerably good condition. The buyers were numerous from every part of the country, more particularly from England, and from various districts in Ireland. At the close of the market a considerable number of lambs of all kinds were turned off unsold.

WARWICK MONTHLY FAIR.—This fair was held on Monday last, when many farmers were present to see the preliminary trials connected with the Royal Agricultural Society, but there was a small attendance of buyers. Beef fetched from 6½d. to 7d. per lb., and mutton, of which there was a limited supply, from 6½d. to 7d. per lb. Lambs from 8d. to 8½d. per lb. From the above-mentioned reason, everything was sold early in the day.

WEDMORE FAIR.—Everything had a downward tendency. Best beef realised from 10s. to 10s. 3d., the top figure; inferior from 8s. to 9s. 3d. per score. In sheep there was a sensible reduction of 4s. to 6s. per head. For store pigs there was little demand.

YORK FORTNIGHTLY MARKET.—Calving and dairy cows were in good supply and demand. Grazing beasts were in supply above requirement, and, except for animals of good quality, business was dull. Fat beasts, 6s. 6d. to 7s. 6d. per stone—mutton sheep, 6d. to 6½d. and 7d. per lb. Altogether rather a dull market.

IRISH FAIRS.—KILLS: The supply of stock was large. Some prime lots of beef were bought up quickly, as well as store bullocks, which fetched tolerable prices, but all inferior sorts were unsaleable. Sheep were also plentiful, and all cleared off before the evening. Small pigs sold at low rates. The horse fair was dull, but a good many were sold throughout the day.—**BALLINAY:** The buying was not brisk, owing to the drought. Dry cows were plenty, but not in demand.—**NAVAN:** Good beasts sold tolerably well, but inferior sorts were unsaleable. The sheep market was rather animated, and wedders brought from 48s. to 58s. each. Lambs were in brisk demand, and the supply was good.—**DUNDALK:** Some excellent cattle in the beef line were exhibited, and were early bought up at from 58s. to 60s. per cwt. under sink. Inferior and middling beef could be bought at from 46s. to 54s. per cwt. The prices of fat cattle rated at from £18 10s. to £20 generally. A fair supply of sheep, and a plentiful supply of lambs. The prices of these were a little depressed—very good ones selling for 25s. each, and from that down to 20s. being the run.

REVIEW OF THE CORN TRADE DURING THE PAST MONTH.

The past month from its forcing character has brought on an early harvest. Excessive heat with many severe and destructive storms have been its characteristics. As these storms commenced in June, very few remember so peculiar a summer. The early and heavy pieces of wheat, as well as barley, have sustained much damage, especially in some parts of Yorkshire, and the midland and southern counties, where there was much hail, which riddled the corn, while an unusual breadth has been permanently laid. The heat, too, has produced premature ripeness, and the light lands promise a very poor return of thin grain, of very little use to the miller.

The hay crop has been good and well harvested.

The armistice announced after the first week, followed by the conclusion of peace, between France and Austria, coupled with the forcing weather, have produced a further decline in wheat of fully 2s. to 3s. per qr.; but the appearance of new samples, confirming the opinion that the crop will not exceed an average, caused a little reaction at the month's close.

The most favourable accounts come from the west, and the worst from the fens, which suffered severely from drought. In Scotland also there are general complaints, but Ireland seems not to have equally suffered.

The early potatoes turn out very bad in many places; and the disease appears to make daily inroads on the bulk of the crop, so there is generally but a poor prospect as respects this esculent.

In Spain, Italy, and the south of France, the wheat is generally gathered, the latter country not yielding so well as last year, and some deficiency is expected in Belgium and Holland. Northern Europe has only gathered the rye and rapeseed, the former proving very light and defective; but the wheat promised well, though in the interior of Russia reports were very unfavourable as respects this grain, and markets were consequently firm at Petersburg.

In America all things went well until the 4th of June, when a severe frost nearly swept off all the fruit, with a good deal of maize, and inflicted some injury on the wheat, as far west as Ohio. Yet, as the harvest in the southern States was over, and the north had since experienced finer weather, a better gathering than last year was still expected.

There can be little doubt that both in our own

country and France there will be a great variety in the samples of wheat; and the scarcity of labour so far impedes the gathering, that with bad weather we should experience a rapid advance upon present prices; while the unsatisfactory nature of the peace concluded gives a cloudy atmosphere to politics, the course of which may be far more complicated than reckoned on, and with all these eventualities, it seems improbable that farmers will force their stocks on to be sacrificed: indeed, supplies are diminishing already, and to this the turn may be traced, as with the exception of peas and oats, no cereals are expected to be abundant.

The following quotations, from foreign markets, show there is little inducement to continue the free exports to this country. At Bordeaux, fine white wheat was quoted 43s. 6d.; at Nantes, the price of white was 41s., of red 39s. per qr. of 480 lbs.; Paris quotes 39s. for best quality; at Antwerp, native wheat was about 46s.; at Louvain, a trifle more was paid for fine red; the best red at Rotterdam being worth near 48s. per qr.; Danzig, prices for high mixed were still 50s. to 52s.; at Hambro', the top price was 47s., at Königsberg, the same; red at Stettin was worth 42s. 6d.; at Taganrog, 33s. 6d. was quoted for Ghirka red; at Odessa 35s. was paid for the same; prices at Genoa have been 52s. for native, but were declining and uncertain since the peace; at Algiers, soft new wheat brought about 42s., with a drooping tendency in the markets, in consequence of discouragement from Marseilles. New York was still high for breadstuffs, though flour and wheat were continually giving way: red Kentucky wheat was worth about 49s., and white Kentucky 62s. per qr., so that without a material change no imports may be expected thence.

The first Monday in London opened with a heavy supply of foreign wheat, and a fair portion of English. The morning's additions from the near counties were only moderate, but as the former receipts were not disposed of, there was a show of plenty. A heavy storm having occurred on Saturday night, which laid a good deal of corn, factors began by asking higher prices; but millers, who were only in moderate attendance, did not overlook the foreign supply, and refused to buy at any advance, only purchasing to meet the wants of the day. In foreign there was very little passing. A

return of fine weather with the dull London reports produced a similar state of things in the country. Many barely maintained previous rates, as Birmingham, Louth, and Bristol; others as Hull, Leeds, and Wolverhampton, were 1s. per qr. lower. Newcastle, Wakefield, and Gloucester noting a decline of 1s. to 2s. per qr. Though Liverpool was well attended, the price of wheat on Tuesday was lowered 2d. to 3d. per cental, and on Friday there was unusual depression, with a further fall of 3d. to 4d. per cental. Though Scotland was still poorly supplied with rain, wheat both at Edinburgh and Glasgow were rather in buyers' favour. In some parts of Ireland, as at Waterford, wheat also declined 6d. per brl., but at Cork it was firm. The week closed heavily in London.

The second week had only a moderate supply from abroad, the quantity being only one-third of the week previous; but of English there was a fair arrival: Essex and Kent sent up an average quantity of samples, which with the previous accumulations made a full market. With the news of the armistice, and several days of brilliant weather, the market was severely depressed, and millers declining to make purchases without a concession of about 4s. per qr., factors eventually made sales on these terms, but this did not clear the stands. Those who were determined to sell foreign were obliged to accept a similar reduction, but the sales were then only retail. The country markets did not generally yield to this depression: Bristol, Birmingham, and Wolverhampton only noted a decline of 1s. to 2s. per qr.; Sheffield and Stockton-on-Tees made the fall 2s. per qr.; Hull, Louth, and Newark were 2s. to 3s. cheaper; but Boston, Lynn, and Gainsborough were within 1s. of the London decline. Liverpool, on the contrary, on Tuesday found some speculative inquiry for French wheat at 1d. to 2d. per cental advance, but on Friday the buyers had a turn in their favour. Both Scotland and Ireland reported dull and cheaper markets.

On the third Monday there was a large foreign and a fair English supply, with a good sprinkling of samples in the course of the morning from the near counties. A few early sales realized former rates, but millers subsequently not being disposed to increase their stock freely without about 2s. abatement, Essex factors resisted this further reduction, though it was accepted at some of the Kentish stands, where there was more desire to sell. The bulk of the samples were, therefore, held over, and in the course of the week factors placed the whole without abatement. In the country markets the supplies this week were small, and some places were consequently dearer, more especially as storms occurred, doing further damage. Newcastle was

2s. per qr. dearer, and Norwich improved 1s. to 2s.; Gainsborough and Market Harborough were as much down, but generally there was no change from previous prices. Leeds and Birmingham realized 1s. per qr. more money. Liverpool on Tuesday was better attended, with freer sales, and on Friday there was an upward movement to the extent of 1d. to 2d. per cental.

On the fourth Monday, both foreign and English supplies were fair, with about the usual show from Kent and Essex for the time of year. Among these samples were two of new white wheat, one of fair quality from Essex, the other from Kent very thin. The recurrence of storms and unsettled appearance of the weather, as well as the advance at the close of the week in some country markets, enabled factors to realize fully 1s. per qr. advance on English qualities, the same improvement being occasionally realized on foreign in retail.

The London averages show a decline of 2s. 8d. in the course of the month, receding from 48s. 3d. to 45s. 7d., while the general averages, which are a week behind them, only exhibit a decline of 1s. 9d., commencing with 48s. 3d. and closing at 46s. 6d. The imports for the four weeks into London were 16,749 qrs. English, 79,628 qrs. foreign wheat, against 15,920 qrs. English, 59,636 qrs. foreign, in July last year. The imports into the kingdom for June were, 645,823 qrs. wheat, 663,035 cwts. flour. The exports were nil.

The flour trade as respects town-made of first quality has not varied, 46s. per sack still being the quotation of millers, but Norfolk and French qualities have receded in value, after some fluctuations, to the extent of 3s. per sack. The imports have fallen off, but the weather has been against sales. There have been received into London in the four weeks 44,483 sacks from the country and 10,488 sacks from France—against 66,330 sacks country, 16,602 brls. American this time last year.

The barley trade in the course of the month has little varied; but grinding sorts have declined, especially the light sorts, from the fictitious value placed on them by the extraordinary demand for the French army: in these sorts there is a reduction of about 3s. per qr., but of the heavier and sweet sorts fit for distillation the decline has been about 1s. per qr. By the few new samples of English brought to market for the first time on the third Monday, it is expected that much will be thin and small. The imports for the four weeks into London have been only 417 qrs. of English, with 35,333 qrs. foreign—against 616 qrs. English and 52,906 qrs. foreign for the same period in 1858. The entire imports of June for the kingdom were 95,345 qrs.

MONTHLY RETURN.

AN ACCOUNT SHewing THE QUANTITIES OF CORN GRAIN, MEAL, AND FLOUR, IMPORTED INTO THE UNITED KINGDOM, AND ADMITTED TO HOME CONSUMPTION, IN THE MONTH OF JUNE, 1859.

Species of Corn, Grain, Meal, and Flour.	Imported from foreign Countries.	Imported from British Possessions out of Europe.	Total.
	qrs. bush.	qrs. bush.	qrs. bush.
Wheat	645823 0	0 2	645823 2
Barley	95841 6	5 0	95846 6
Oats	118917 2	—	118917 2
Rye	8967 3	—	8967 3
Peas	7708 7	1435 2	9143 9
Beans	19778 6	—	19778 6
Maize or Indian Corn ..	46985 5	—	46985 5
Buck Wheat	1791 2	—	1791 2
Bare or Bigg	—	—	—
Total of Corn and Grain	945311 7	1440 4	946752 3
	cwts. qr.lb.	cwts. qr.lb.	cwts. qr.lb.
Wheat Meal and Flour.	663919 1 24	116 0 20	663935 2 16
Barley Meal	—	—	—
Oat Meal	1 0 0	11 3 0	12 3 0
Rye Meal	2 0 0	—	2 0 0
Pea Meal	—	—	—
Bean Meal	—	—	—
Indian Meal	121 1 18	—	121 1 18
Buck Wheat Meal	11 1 13	—	11 1 13
Total of Meal and Flour.	663955 0 27	127 3 20	663188 0 19

FLUCTUATIONS IN THE AVERAGE PRICE OF WHEAT.

PRICE.	June 11.	June 18.	June 25.	July 2.	July 9.	July 16.
51s. 5d.	..	..	..	..	..	..
49s. 11d.	..	..	..	..	..	..
48s. 3d.	..	..	..	..	..	..
46s. 9d.	..	..	..	..	..	..
46s. 6d.	..	..	..	..	..	..
46s. 4d.	..	..	..	..	..	..

PRICES OF SEEDS.

LONDON, MONDAY, July 25.—The market for Clover seeds remains without alteration, and without any business passing. New Rapeseed comes in fair quantity and sold at last week's values. Canaryseed met a better sale at full prices.

CUTLER & BARKER, Seed-factors.

BRITISH SEEDS.

MUSTARDSEED, per bush, new 12s. to 17s, brown 10s. to 12s.	
CORIANDER, per cwt.....	14s. to 16s.
CANARY, per qr.....	64s. to 66s.
TRIFOIL, new.....	—s. to —s.
TAKES, Winter, new, per bushel.....	—s. to —s.
LINSEED, per qr., sowing —s. to 64s., crushing 54s. to 58s.	
LINSEED CAKE, per ton.....	£9 10s. to £10 10s.
RAPESEED, per qr.....	54s. to 58s.
RAPE CAKE, per ton.....	£5 10s. to £6 0s.

FOREIGN SEEDS, &c.

CLOVERSEED, red —s. to —s.....	white —s. to —s.
TRIFOIL.....	—s. to —s.
HEMPSEED, small, 38s. per qr.....	Dutch —s. to 38s.
CORIANDER, per cwt.....	16s. to 18s.
CARAWAY.....	35s. to —s.
LINSEED, per qr., Baltic 53s. to 58s.....	Bombay 54s. to 60s.
LINSEED CAKE, per ton.....	£9 10s. to £11 0s.
RAPESEED, Dutch.....	54s. to 58s.
RAPE CAKE, per ton.....	£5 0s. to £6 0s.

HOP MARKET.

BOROUGH, MONDAY, July 25.—We have no alteration to report in the character of our market, which is very inactive at last week's quotations. The plantations are progressing favourably, and the duty has been backed at £260,000.

Mid and East Kents	80s. to 105s. choice 140s.
Weald of Kents	65s. 68s. " 75s.
Sussex	56s. 62s. " 65s.

WORCESTER HOP MARKET, Saturday last.—There is an improvement in our hops, and £20,000 duty is now backed. The quality is expected to be very superior, if they finish well, as the burr must be greatly assisted by these warm rains. Market quiet.

POTATO MARKETS.

BOROUGH AND SPITALFIELDS.

LONDON, MONDAY, July 25.—The supplies of Potatoes have become very moderate. For most kinds there is a fair demand, at very full prices. Shaws are selling at from 100s. to 140s., Regents 120s. to 160s. per ton. No foreign Potatoes are on offer.

COVENT GARDEN MARKET.]

LONDON, SATURDAY, July 23.—Grapes and Pine Apples still still realize fair prices. West India Pines have been plentiful and good. Gooseberries, Currants, and Raspberries are getting scarcer, and Cherries and Strawberries are nearly over. English Apricots have made their appearance. Greengage Plums obtain 2s. a dozen. Oranges fetch 3s. 6d. and 10s. per 100. Nuts of all descriptions continue to realize fair prices. Cabbages and French Beans are plentiful. Rhubarb, Asparagus, and Sea-kale are getting over. Peas, Beans, Horn Carrots, and Globe Artichokes may be obtained in quantity. Cauliflowers are cheaper. New Potatoes realize from 6s. to 15s. per cwt. Cucumbers abundant. Out flowers chiefly consist of Orchids, Gardenias, Kalosanthus, Lily of the Valley, Violets, Mignonette, Heaths, and Roses.

FRUIT.

Pigs, per dozen.....	s. d.	Pineapples, per lb.....	s. d.
Apples, per doz.....	6 0 10	Currants black, p. doz.....	5 0 0
Oranges, per 100.....	6 0 10	Apricots, per dozen.....	4 0 0
Melons, each.....	4 0 0	Lemons, per dozen.....	1 0 0
Cherries, per lb.....	6 0 1	Plums, per punnet.....	3 0 0
Cobs, per lb.....	3 0 0	Raspberries, per punnet.....	6 0 0
Grapes new, per lb.....	3 0 0	Peaches, per dozen.....	6 0 15
Nectarines, per dozen.....	10 0 15	Strawberries, per basket.....	1 0 2 0

VEGETABLES.

Cauliflowers, per doz.....	s. d.	Best, per dozen.....	s. d.
Greens, per doz. bunches.....	2 0 4	Leeks, per bunch.....	0 0 0
Cabbages, per doz.....	1 0 2	Celery, per bundle.....	1 0 0
Sea-kale, per punnet.....	0 0 0	Shallots, per lb.....	0 0 0
French Beans, per punnet.....	1 0 1	Garlic, per lb.....	0 0 0
Asparagus, per bundle.....	2 0 5	Lettuce, cab., per score.....	1 0 1
Rhubarb, per bundle.....	0 0 0	Tomatoes, per dozen.....	2 0 4
Potatoes, per ton.....	60 0 10	Onions, per score.....	1 0 1
Do. per cwt.....	2 0 0	Radishes, turnip, per doz.....	0 0 0
Do. per cwt.....	4 0 0	Horseradish, per bundle.....	1 0 0
Do. new, per lb.....	0 0 0	Mushrooms, per petticoat.....	0 0 1
Green Peas, per quart.....	1 0 2	Parsley, per 12 bunches.....	2 0 4
Carrots, per bunch.....	1 0 0	Artichokes, per doz.....	2 0 0
Turnips, per bunch.....	0 0 0	Jerusalem, per bunch.....	0 0 0
Spinach, per sieve.....	1 0 0	Stavory, per bunch.....	0 0 0
Cucumbers, per doz.....	2 0 0	Mint, green, per bunch.....	0 0 0

CHICORY.

LONDON, SATURDAY, July 23.—Nearly all kinds of Chicory have changed hands slowly. In prices, however, we have no change to notice. The supply at the market is tolerably good.

ENGLISH, per ton £ 9 0s to £ 0 0s	ANTWERP.....£ 9 0s to £ 9 0s
HARLINGEN..... 5 5 0	DACKUM..... 0 0 0
BRUGES..... 9 0 0	GUERNEY..... 5 10 0
HAMBURG..... 9 0 0	BELGIUM..... 9 0 0

PRICES OF BUTTER, CHEESE, HAMS, &c.

BUTTER, per cwt.:	s.	CHEESE, per cwt.:	s.
Friesland.....	100s. to 105	Cheshire.....	85
Kiel.....	—	Cheddar.....	80
Dorset.....	100 108	Double Gloucester.....	60 70
Carlow.....	84 100	HAMS:	
Waterford.....	96 100	York.....	75 85
Cork.....	90 105	Westmoreland.....	75 85
Limerick.....	—	Irish.....	80
Sligo.....	90 100	BACON: Wiltshire, dried 6s 7d	
Passey, per dozen lbs. 6d. to 14s. 6d.		Irish, green.....	55 65

ENGLISH BUTTER MARKET.

LONDON, MONDAY, July 25.—More improving prices for fine butter, which is still very scarce, but a plenty of middling quality received on the market unrequiring for.

Dorset, prime.....	per cwt. 112s. to 114s.
Middling.....	nominal.
Devon.....	104s. to 106s.
Fresh.....	per doz. lbs. 12s. to 14s.

GLASGOW CHEESE MARKET, (Wednesday).—Supply small, and prices firm. There were 6 tons passed through the weigh-house scales, and four carts in the Basaar. Current prices—prime old, 70s.; new, 58s. to 59s.; skim, 22s. to 24s. per cwt.

CREWE CHEESE FAIR.—There was a supply of good cheese, upwards of 80 tons. There was an abundance of buyers, the prices obtained averaging from 55s. to 75s. per cwt., which at this season of the year is considered very good.

HAY MARKETS.

SATURDAY, July 23.—SMITHFIELD.—A fair demand.
CUMBERLAND.—Trade steady at full prices.
WHITROHAPEL.—A moderate inquiry on former terms.

At per Load of 36 Trusses.

	SMITHFIELD.	CUMBERLAND.	WHITROHAPEL.
MEADOW HAY ..	50s. to 55s.	60s. to 65s.	60s. to 65s.
DO., NEW	70s. 80s.	70s. 80s.	70s. 80s.
CLOVER	80s. 110s.	80s. 110s.	80s. 110s.
DO., NEW	80s. 90s.	80s. 90s.	80s. 90s.
STRAW	25s. 30s.	25s. 30s.	25s. 30s.

TIMBER.

LONDON, SATURDAY, July 23.—Our market is very inactive for the time of year, and the arrivals from the Baltic continue extensive. The demand generally is somewhat heavy, but we have no change to notice in prices.

Per load—	£ s.	£ s.	£ s.	£ s.
Quebec, red pine	3 10	4 5	3 10	4 5
Yel. Pine	3 10	4 5	3 10	4 5
Quebec Oak, White	6 0	6 5	6 0	6 5
„ Elm	4 0	4 15	4 0	4 15
„ Birch	4 10	5 10	4 10	5 10
Danube Oak	3 10	4 5	3 10	4 5
Muscat Fir	3 10	4 5	3 10	4 5
Norwich	2 10	3 5	2 10	3 5
Maste, Queb. Red Pine	5 5	6 10	5 5	6 10
Do. Yellow Pine	5 0	6 10	5 0	6 10
Lethwood, Danube Fir	8 0	9 10	8 0	9 10
Do. Memel	10 0	11 0	10 0	11 0
Do. Quebec	5 0	5 5	5 0	5 5
DEALS, per C. 12 ft. by 3 by 9 in.	9 0	11 5	9 0	11 5
Quebec Wh. Spruce	9 0	11 5	9 0	11 5
Do. Red Pine	11 10	17 0	11 10	17 0
St. John Wh. Spruce	11 11	15 0	11 11	15 0

WOOL MARKETS.

ENGLISH WOOL MARKETS.

LONDON, MONDAY, July 25.—Owing, in some measure, to the firmness with which the colonial wool sales are progressing, there is an improved feeling in the demand for all kinds of home-grown Wool, at fully—but at nothing quotable beyond—the late advance in prices. Several parcels have changed hands for shipment to Belgium, and the home trade is decidedly firm, notwithstanding that stocks are rather heavy.

Per pack of 240 lbs.

Fleeces—Southdown Hogs	£19	0	to £20	0
Do. Half-bred Hogs	18	10	19	0
Do. Kent	17	0	18	0
Do. Southdown Ewes and Wethers	16	10	17	0
Do. Leicester do.	15	10	16	10
Sorts—Clothing, picklock	18	10	19	0
Do. Prime and picklock	17	10	18	0
Do. Choice	16	0	17	0
Do. Super	14	0	15	0
Do. Comb—Wether matching	20	0	21	0
Do. Picklock	17	0	18	0
Do. Common	14	10	15	10
Do. Hog matching	23	0	24	0
Do. Picklock matching	17	10	18	10
Do. Super do.	14	10	15	10

LEEDS (ENGLISH AND FOREIGN) WOOL MARKETS, July 22.—There is still a good deal of excitement in the English wool trade, though at present it seems to be more confined to the stapler than the manufacturer. Prices are firm at the highest quotations of last week. There has not been much doing in colonial wool, but the advance in London will secure improved prices for stocks in this market. There is a good demand for low wools at somewhat higher rates.

BRADFORD WOOL MARKET, (Thursday last).—The transactions in wool have been more between stapler and stapler than to consumers; the latter look with suspicion on wool at the present high rates, and buy only what is necessary for their immediate requirements. In noils and shorts there is no change worthy of notice.—Bradford Observer.

YORK WOOL MARKET.—We had about 300 sheets of wool, 60 of which were Moor wool, reducing good-bred wools to 240 sheets, nearly all of which were sold at advanced prices. Moor wools had slow sale at 9s. to 10s., superior ditto in clean condition 10s. 3d. per stone; this description of ditto has not advanced along with the well-bred sorts.

DONCASTER WOOL MARKET, Saturday last.—The wool trade was less lively to-day. The large buyers being well supplied, are less anxious in securing lots, and the advance given by dealers during the week in Lincolnshire was not responded to here, and fewer buyers attended, so that several lots remained over unsold at a late hour of the day.

LIVERPOOL WOOL MARKET, JULY 23.

SCOTCH.—This being the week in which the great Scotch fairs take place, the trade are generally there, and in consequence there has been little doing here, and that at a slight advance on late rates, and quotations are according.

	s.	d.	s.	d.
Laid Highland Wool per 24 lbs.	10	0	12	6
White Highland do.	14	6	15	6
Laid Crossed do. unwashed	14	0	15	0
Do. do. washed	15	0	16	0
Laid Cheviot do. unwashed	15	6	18	0
Do. do. washed	18	0	24	0
White Cheviot do. washed	34	0	40	0

LONDON WOOL SALES.

CITY, MONDAY, July 25.—The second series of public sales of foreign and colonial Wool for the present year commenced on Thursday last with a full attendance of both home and foreign buyers. The biddings were exceedingly active, and a general advance was established at 1d. to 1½d. per lb. on the rates current at the close of the last May sales. The quantity to be submitted at these auctions amounts to about 90,000 bales, viz., 25,400 bales Sydney, 23,800 Victoria, 9,300 Tasmania, 7,800 South Australia, 8,300 New Zealand, and about 14,900 of other descriptions.

FOREIGN AND COLONIAL WOOL MARKET.

	Per lb.	s.	d.	s.	d.
German, (1st and 2nd Elect	3	4	to 4	6	
Saxon, (Prima	2	4	to 3	0	
and (Secunda	2	0	to 2	4	
Prussian, (Tertia	1	8	to 1	10	
COLONIAL:—SYDNEY—Lambs	1	10	to 2	3	
Scoured do.	1	8	to 2	10	
Unwashed	0	10	to 1	3	
Locks and Pieces	0	0	to 1	9	
Slips and Skin	1	6	to 1	7	
PORT PHILIP—Lambs	1	9	to 2	7	
Scoured do.	1	5	to 2	11	
Unwashed	0	9	to 1	6	
Locks and Pieces	1	1	to 1	4	
S. AUSTRALIAN—Lambs	2	4	to 3	0	
Scoured do.	1	5	to 2	9	
Unwashed	0	10	to 1	3	
Locks and Pieces	0	11	to 1	9	
V. D. LAND—Lambs	1	8	to 1	10	
Scoured do.	1	8	to 1	7	
Unwashed	1	0	to 1	2	
Locks and Pieces	1	3	to 1	0	
CAPE OF GOOD HOPE—Fleeces	1	2	to 2	3	
Lambs	1	5	to 1	10	
Scoured	1	2	to 1	11	
Unwashed	0	4	to 1	4	

MANURES.

PRICES CURRENT OF GUANO, &c.			
PERUVIAN GUANO, (per ton, for 30 tons).....	£12	0	to £ 0 0 0
Do. Do.....(under 30 tons)....	12	12	0 13 5 0
KOBBIA MOORIA GUANO, (48 per cent. Phosphate and 4 per cent. Ammonia).....	6	0	0 6 10 0

ARTIFICIAL MANURES, &c.

Nitrate Soda (per ton)	£16	0	to £17	0
Nitrate Potash or Saltpetre	32	0	to 33	0
Sulphate Ammonia	14	0	to 15	0
Muriate ditto	20	0	to 21	0
Superphosphate of Lime	5	10	to 6	0
Soda Ash, or Alkali	11	0	to 12	0
Gypsum	1	10	to 2	0
Coprolite	2	10	to 3	0
Sulph. of Copper or Roman Vitriol, for Wheat steep, 1st qual.	33	0	to 35	0
Ditto, 2nd quality	24	0	to 26	0
Sulph. Bone, Dust, per cwt.	1	0	to 1	10
Do. 4-inch Oil Vitriol, concentrated, per 100 lbs.	0	17	to 0	19
Do. 10-inch Oil Vitriol, concentrated, per 100 lbs.	0	0	to 0	1
Do. Brown	0	0	to 0	0

OIL-CAKES.

Linseed-cakes, per ton	£9	10	to £10	0
This America, viz. 10 0 0 to 10 0 0	10	10	to 10	0
Ditto bags 9 10 0 to 10 0 0	9	10	to 10	0
Thick do. round (none)	0	0	to 0	0
Marseilles	£9	10	to £10	0
English	10	10	to 10	0
Rape-cakes, per ton	5	10	to 5	10
Cottonseed cakes 5 10 0	5	10	to 5	10

JOHN KEEN, 35, Leadenhall-street, (Late Odams, Pickford, and Keen.)

Agricultural Chemical Works, Stowmarket, Suffolk.			
Preston's Corn Meal Manure for Corn Crops	per ton	£3	10
Mangold Manure	per ton	5	0
Preston's Turnip Manure	per ton	6	10
Preston's Superphosphate of Lime	per ton	5	0

Manufactured by Hodgson & Simpson, Wakefield, and Matthews & Co., Driffield.

Nitro-Phosphate	per ton	£7	10
Ammonia-Phosphate	per ton	8	0
Vitriol, Bone, and Manure Works, Howden Dyke, Howden, Ammonia Phosphate	per ton	£8	10
Anderson's Turnip Manure	per ton	8	0
Super-Phosphate of Lime	per ton	7	0

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Harry Hall, Newmarket

E. Huber

Die Pferde des Königs von England, die in der Kaserne zu Newmarket gehalten werden.





CHAMP

at Oxford, England, the property of Michael, Esq. of Oxford, who purchased her when she
 first came of age, and she was awarded at the Oxford Show of the 1st of August, 1847.

London: Printed and Published by W. H. B. 1847.

THE FARMER'S MAGAZINE.

SEPTEMBER, 1859.

PLATE I.

STAR; A HEREFORD HEIFER,

LATE THE PROPERTY OF RICHARD HILL, ESQ., OF GOLDING HALL, SHREWSBURY.

Star, calved on the 15th of October, 1854, is by Master Henry (1314), out of Exhibition, a cow also bred by Mr. Hill.

Master Henry took the first prize at the Hereford Society's meeting in 1856, as well as many other local premiums. Stockton, the grandam of Star, took with her produce the first prize at the Shrewsbury show in 1853, as the best cow and calf, and subsequently the first prize at the Birmingham Fat Cattle Show.

Star was never exhibited but once, when at the Salisbury meeting of the Royal Agricultural Society of England, in July, 1857, she was awarded the first prize of 15 sovs., as the best three-year-old Hereford heifer in milk or in calf. This was a very strong class, including many beautiful specimens of the Hereford cow, with Star still as the "remarkably" good one amongst them. She was sold soon afterwards, at a long price, for Australia.

PLATE II.

GOVERNESS; A THOROUGH-BRED FILLY.

Governess, bred by Mr. Gratwicke in 1855, is by Chatham, dam by Laurel out of Flight by Velocipede.

Chatham, bred by Col. Peel in 1839, is by The Colonel, out of Hester by Camel. He was the best two-year-old of his time, and a winner of the July, the Buckenham, and the Criterion. Chatham went to the stud in 1845, and his stock opened well with Woolwich in 1848. He is also the sire of the following well-known winners—Sittingbourne, Gossip, Walmer, Rochester, The Earl, Homebrewed, Maidstone, Strood, Student, Eloquence, and Kent. Chatham is now settled at Mr. Gratwicke's seat in Sussex, and, we believe, has never left the country, from his first location there at Michel Grove.

This Laurel mare, bred by Mr. Fuller in 1840, is the dam of another Oaks winner, Rhedycina, as well as of Oronian—as the dam of which she is commonly identified—and some seven or eight others not so well spoken of. She was put to the stud at three years old, and never appeared in public. Governess's dam has been in Mr. Gratwicke's possession since 1850. Another filly out of her, also called Governess, by the Merry Monarch, and only a year older than the Oaks winner, is in Mr. Mitchell's stud.

Governess is a mealy chesnut mare, standing close on sixteen hands and an inch high. She has a neat head, with small ears, and a good neck and shoulder, well thrown back. She has a great depth of girth, but is rather flat-sided and plain over her quarters, which are of fair size, but not particularly muscular. She stands rather upright before, and tapers from the arm and thigh downwards. Altogether, Governess is a large framed mare, but not with very great bone, nor much muscular development. She has, so, rather a leggy look, but will still pass in any company as a great, fine filly.

THE RIGHT TO UNDERGROUND WATER.

CHASEMORE v. RICHARDS.

BY CUTHBERT W. JOHNSON, ESQ., F.R.S.

The supposed right to underground water has in most portions of the United Kingdom been the cause of considerable injury. This damage has not been confined to private property: the public have materially suffered; and not only in their health, but in the ill-cultivation of the land. Many thousands of acres of pastures have been merely producing coarse inferior grass, the result of soils surcharged with stagnant water; irrigation has been retarded, or entirely prevented; the atmosphere of considerable districts rendered unnecessarily damp and unwholesome.

Strange opinions as to the right to underground water have very materially led to this state of things. The law, also in such cases, was not, till the case of which I am about to speak, clearly defined by the courts of Westminster. Their decisions had become contradictory and injurious to the community. Every owner of land doubted his right to drain even his own estate, if by so doing he diverted the land-water towards, or into a new natural stream; or, even if in draining his own soil he drew the stagnant water from an adjoining undrained field belonging to a neighbour. In this state of the law need we wonder that every man, or associated bodies of men, sometimes adopted peculiar legal notions of their own? For instance, is it hardly matter of surprise that the commissioners of sewers deemed rivers to be merely ready-made public drains; and that, with much show of good reason, they regarded them as Nature's own freely-provided conduits for the removal of superfluous water?

Then, again, does it not excite a smile when we find what a celebrated engineer, the great Brindley, the father of some of our chief inland canals, deemed rivers provided for? He, too, had no doubt in the matter; for, when before a committee on a canal bill, he was asked what he thought rivers were intended for, he gravely answered, "to feed inland navigations."

Then, again, if we ask the owner of a water-mill what streams are really created for, does not his sincere reply tend in a similar direction? Do not the associations of millers, to be found in the valleys of most considerable streams, defend their rights as if they deemed rivers created only for water-mills? although they well know that water-mills are no small burthens upon the rights of their neighbours; that every raising of their mill-dam, for instance, however small, holds back the water on land that belongs to others. Have not mill-owners held—do they not hold—that no man can irrigate his land who has not an ancient right to do so, since, by so doing, by increased evaporation, he diminishes the volume of water in the mill-stream? Have they not in reality, for the sake of consistency, been driven to contend that

all the rain-water which falls within a water-shed belongs to the mill-owners on the stream that drains the district within that water-shed? Did they not threaten the commissioners of the Surrey roads with an action, because they dug wells along their trust for the purpose of watering the roads? And when the inhabitants of Croydon dug a well on their own ground, for the purpose of supplying themselves with water, have they not spent thousands of pounds in law costs, and years in litigation, in an ineffectual attempt to prevent them using their own well-water?

And the vague dreams of the landowner have hardly been less remarkable. It is only a few months since that one of these, at York assizes, tried—ineffectually, it is true, but still he *tried*—to prevent a neighbour draining his own land in the ordinary way, because, in draining the substratum of peat (a stratum common to the whole district), it drained the plaintiff's substratum also, as well as some ponds sunk into the same level. And when the commissioners of sewers are laying down public drains to remove bad water, and its concomitants, discomfort and disease, from their district—if in so doing they happen to lower the water in some miserable unwholesome fish-pond, how desperately the owner is wont to cling to his unsightly tank; how ready he is to appeal to the law; how considerable are his demands for a recompence!

A very recent and memorable decision of the House of Lords, on this all-important question, has removed so many doubts as to the right to underground water, and will clear the way to such important improvements, not only in the better supply of water for domestic purposes, but to far more important advances in valley drainage, that it can hardly be too extensively known. I propose, then, to enter on this occasion a little into detail in this great case; but before I do this, I will endeavour to briefly show the obstacles which canals, water-mills, &c., far too frequently present to the drainage of a district, and then still more shortly trace the confusion of legal opinions which had arisen with regard to the law of underground water.

It is in the first report of Her Majesty's commissioners for enquiring into the health of towns (vol. ii. p. 420) that is to be found the evidence of the late Mr. James Dean (a land surveyor) on the obstacles to sanitary and agricultural improvement too often presented by mill-dams. He was speaking of a particular water-mill, and of the injury it inflicted in this way; but he added, "The case of this water-mill is so common a case, that I would urge it particularly on the attention of the commissioners, not only as affecting the sanitary condition of the population, but extensively the

drainage and improvement of the land in the kingdom. I could bring forward instances, from every part of the country where I have been, of streams which should have a free flow, and should supply a town tailed up from ten to twenty feet, producing a sluggish and stagnant flow, interfering not only with the whole of the drainage immediately adjacent to the town, but with the beneficial use of the water for irrigation and other purposes above and below it. The extent of mischief produced by the right of tailing up streams for mill purposes appears to me not to be sufficiently appreciated. A mode of procedure for the purchase of such rights, and for compulsorily taking them on settled and liberal conditions, would be of the greatest importance for the general improvement of the health of towns, as well as for the general improvement of agriculture. It is scarcely an exaggeration to say, that for every pound of mill rent a hundred pounds worth of injury is done to other property, setting aside all consideration as to the effect of a proper drainage on the public health. The pecuniary injury is not confined to the effects on the direct or main stream, but is extended over its tributary branches often for miles distant. The extent of injury is rarely if ever traced. It is more commonly felt on attempts to drain lands, when it arises as an obstacle to the getting of a proper outfall. It also acts as an obstacle to beneficial irrigation. It has grievously interfered with my own operations for drainage, and must frequently interfere with any such operations on a large scale."

The evidence of Mr. J. Dean hardly needs any confirmation; if it did, why unfortunately that testimony would be too readily found in all directions. Mr. W. B. Wood, when speaking of the improvement to be made in land, by amending the channels of rivers and other watercourses, observes (*Jour. Roy. Ag. Soc.*, vol. xiii., p. 369), "Not the least cause of damage on many streams are the mills. In many instances a mill affects the drainage of much land, sometimes hundreds of acres above it, and does yearly more damage to such lands, by pounding the water, than its annual rent bears any comparison to."

Let the reader turn to the next volume of the same invaluable journal (vol. xiv., p. 130), and read the report of Mr. J. Henderson, on the Rye and Derwent drainage, and note the instances given of the obstacles which mill-dams present to improvement. To use the words of the reporter: "Let any one travel from the Tyne to the Bristol Channel, down the rich red-sandstone valleys, and observe the condition of the streams as to drainage, and he will have scope enough for his imagination in depicting the benefits which would result if all the mill-dams and artificial obstructions were removed, and the waters were allowed to regain the level of their natural outfall."

And at p. 419, in the same volume, Mr. Henry Evershed, in his prize report on the farming of Surrey, remarks, "A large portion of the land on the banks of the Wey and Mole is exceedingly flat and low; while the number of flour and other mills frequently compels the water to head back, to the great detriment of the land. Hundreds of

acres are every year flooded from this cause, and under-drainage is of course out of the question."

Again, in the very next volume of the Society's journal (vol. xv., p. p. 3, 61), we find Mr. J. A. Clarke, in his prize essay on trunk drainage, warmly addressing himself to these evils. He says, "The number of brooks and streamlets thus held back as feeders for deep-water navigations, or lifted to gain a water-power for myriads of mills, often appropriating the whole descent of the stream, it is impossible for us to compute. Neither can we conjecture, except in the widest manner, the relative extent of the ground injured by the consequent floodings, in comparison with the magnitude of the interests dependent upon a continuation of the mischief." And in a subsequent page (61) he graphically describes the river Nene, "running a very sinuous course of about sixty miles, from Northampton to Peterborough, possessing a natural fall of $3\frac{1}{4}$ feet per mile, but this held up, in levels throughout, by no less than 33 water-mills for grinding flour, and 34 locks and 11 staunches—some for the mills, and some for the purposes of navigation; the natural fall being 177 feet."

It was some time after the date of this paper that Mr. Clarke again recurred to this great evil. This was in February of the present year, when addressing the members of the London, or Central Farmers' Club, he remarked (*Farmer's Magazine*, vol. l., p. 255), "Solomon says, 'All the rivers run into the sea.' But the grievance is that they don't; for whether or not the oriental streams with which the wise king was familiar may have all overflowed at intervals like the Nile and Jordan, it is certain that English fresh-waters at the present day seem inclined to linger in the valleys and repose on the meadows, or wander anywhere rather than roll straight down to the ocean. In some cases the outfalls, or river-mouths, are in a defective state; but, generally speaking, the exigencies of their alluvial deltas or estuary marshes have caused them to be to a considerable extent opened, embanked, and watchfully preserved. Thus, great outfall works have been executed on the river Dee, below Chester; at the mouth of the Parret and its connected rivers; in several harbours and estuaries along the shingly coast of the Channel; in East Norfolk; in the estuaries of the Ouse, Nene, and other Wash rivers; and in the streams converging to the Humber: while in Scotland we have the example of the Clyde improvements; and, again, the similar dredging of a deep channel for the Tay. But many great alterations and improvements yet remain to be carried out. However, it is the inland course of the streams that principally calls for amelioration. These natural arteries are employed for every purpose that water is good for; and the water is thus detained for such uses, in spite of drainage necessities, instead of being conducted speedily to the sea. They are dammed into reservoirs, intercepted for canals, especially in the central, northern, and western counties; and besides being neglected and choked with weeds or with osiers, or obstructed by strangulating bridges, innumerable brooks and rivulets are suffering from the

diphtheria of a water-mill, or a succession of mill-wheels appropriating the whole descent of the stream. Sometimes, hundreds of acres of meadow are ruined by the picturesque dilapidations of a mill mentioned in Domesday, or by the pounding of the water for the sake of a few baskets of fish. Not that there is any objection to the employment of running water as a motive power, or a means of transit, or a supply for towns, as an ornament in a park, or for the refreshing of a meadow, provided that damage of greater consequence is not inflicted upon any interest, and that there is an amply capacious channel for the outlet of the heaviest downfall, without overflow and without injury to lands by the prevention of the best husbandry. How many among the myriad water-courses of our country are all that can be desired in this respect, I cannot undertake to say; but the following record of actual disaster—to say nothing at present of the still greater mischief of good culture prevented—shows the prevalence of defective and ill-managed rivers.” Mr. Clarke then gives a copious list, filling two or three closely printed columns, of the damages inflicted in our island upon the lowland farmers by the overflowing streams, and their impeded water-courses.

But to proceed to the law of these cases. The right of the adjoining proprietors to flowing streams—to have those streams uninjured by any interference, has long been recognised by our courts of justice; but they uniformly applied, till more recent times, a widely different doctrine to *underground* waters. Such waters seem to belong to him who first avails himself of them. And the distinction between them and the water of streams, was very fairly put by the late Judge Maule in *Smith v. Kenrick* (7 C. B. 546), where he observes: “The distinction between subterranean and surface rights appears to be this: As to surface flows, parties acquire rights to them because there is the acquiescence of everybody who has any interest in the matter; but as to underground percolation, no rights are gained because nobody knows anything about them.”

In the year 1808 the first material confusion of ideas, with regard to underground water, began to arise. This was caused by the supposed ruling of Lord Ellenborough (a very considerable judge), in a case (*Balston v. Bensted*, 1 Campbell 463) where the owner of a stone quarry, by the necessary pumping of the water for the working of the pit, reduced the amount in a spring of water which supplied his neighbour's bath. As early in the trial Lord Ellenborough laid it down as law, that the only question to be determined was whether the supply of water to the bath had been diminished by pumping the water out of the stone quarry, the defendant declined to proceed with the trial; and so the right to enjoy another man's underground water was in this case apparently supported.

It may reasonably be believed that this *nisi prius* decision of Lord Ellenborough would hardly have met with the concurrence of a full court. Subsequent decisions seem to confirm this conclusion.

Thus, in 1843 the Court of Exchequer decided in a very considerable case (*Acton v. Blundell*, 12 M. and W., 324), that the owner of land through

which water flows in a subterranean course has no right or interest in it which will enable him to maintain an action against a landowner, who, in carrying on mining operations on his own land in the usual manner, drains away the water from the land of the well-owner and lays his well dry. In this case the Court remarked, in giving their judgment: “The ground and origin of the law which governs streams running in their natural course would seem to be this: That the right enjoyed by the several proprietors of the lands over which they flow is, and always has been, public and notorious: that the enjoyment has been long continued—in ordinary cases, indeed, time out of mind—and uninterrupted; each man knowing what he receives and what has always been received from the higher lands, and what he transmits, and what has always been transmitted to the lower. But in the case of a well sunk by a proprietor in his own land, the water which feeds it from a neighbouring soil does not flow openly in the sight of the neighbouring proprietor, but through the hidden veins of the earth beneath its surface. No man can tell what changes these underground sources have undergone in the process of time: it may well be that it is only yesterday's date that they first took the course and direction which enabled them to supply the well. Again, no proprietor knows what portion of water is taken from beneath his own soil—how much he gives originally, or how much he transmits only, or how much he receives; on the contrary, until the well is sunk, and the water collected by draining into it, there cannot properly be said, with reference to the well, to be any flow of water at all.”

It was in 1852 that the barons of the Court of Exchequer, by an unhappy decision of the case *Dickenson v. the Grand Junction Canal Company* (7 Exchequer, 302), brought the confusion, first introduced by Lord Ellenborough in *Balston v. Bensted*, with regard to underground water, to the climax. In this case, the Grand Junction Canal Company having dug a well on their own ground, at Cowroost, in Hertfordshire, intercepted and pumped from thence into their canal certain waters which might or would otherwise have risen to the surface and flowed into a mill-stream. The Court decided that this was illegal.

In 1855, however, the Court of Exchequer, in the case of *Rawston v. Taylor* (25 L. J. R. Exc. 33), began to perceive that the principle laid down by them three years previously, in *Dickenson v. the Grand Junction Canal Company*, was somewhat inconvenient and absurd. In this case, Taylor having some land containing wet springy spots, drained them in the ordinary way, diverting the water which formerly flowed, as best it might, into Rawston's mill reservoir in another direction. The Court decided that “he was justified in doing so;” or, in the words of Lord Wensleydale, “there is no defined course for the water—it is merely casual; and the party is entitled to get rid of it for the purpose of cultivating his land.”

It was this state of legal doubt, as to the right to underground water, that led to the great Croydon case of *Chasemore v. Richards*: Mr. Chasemore being the occupier of the ancient mill of

Waddon, on the river Wandle (which rises in Croydon), and Mr. Richards the secretary to the Croydon Board of Health; and who, by the direction of the Public Health Act, is the proper person to be made the defendant.

It is now several years since the Board of Health at Croydon purchased some land, dug in it a well, and, by means of Cornish steam-engines, raised the water from that well into an elevated reservoir, from which the inhabitants of the parish are copiously supplied with water. The sewage of the town, by other operations simultaneously carried on, was collected, and after being passed through some settling ponds and filter beds, conducted into the Wandle river. Here then, apparently, could be no special damage as regarded the loss of water-power, since the water raised from the well, and distributed through the water-mains to the inhabitants of Croydon, almost, if not entirely, found its way to the river through the sewers. But as the owners of the first and other mills on the stream objected to the river receiving the Croydon sewage, a question arose, whether the water pumped from the well might not *pro tanto* reduce the amount of water percolating through the soil, and eventually finding its way into the Wandle. And as the arbitrator (Mr. Creasy), to whom the case was referred, found that such was the case, this reduced the question, which was decided by the Court of Exchequer, next by the Exchequer Chamber, and finally by the House of Lords, into the simple question of whether the owner of land may or may not dispose of any underground water found in such land in any way he pleases.

I deem it, in this place, quite unnecessary to go into the detail of the progress of this great suit—a memorable case, which was on both sides conducted with great skill and zeal. All that it is necessary for the landowner to know is, that after a very able discussion at the bar of the House of Lords (Boville, Needham, and Raymond, for the mill-owners; Sir Fitzroy Kelly, Lush, and G. Miller, for the town of Croydon; Burgon, solicitor for the millers; Drummond's, Robinson, and Till, for the Croydon Board), a question was put by the peers to the judges. That question, and the memorable reply it produced, on the 11th of June, 1859, was as follows:—

The following judges were present: Mr. Justice Wightman, Mr. Justice Williams, Mr. Baron Martin, Mr. Justice Crompton, Mr. Baron Bramwell, and Mr. Baron Watson.

And the question being whether, under the circumstances stated in the printed case, the Croydon Local Board of Health are legally liable to the action of the appellant for the abstraction of the water in the manner described? Mr. Justice Wightman said: "My Lords, in this case the judges agree in opinion. I have, therefore, to deliver their unanimous opinion to your lordships. It appears by the facts that are found in this case, that the plaintiff is the occupier of an ancient mill on the river Wandle, and that for more than sixty years before the present action he and all the preceding occupiers of the mill used and enjoyed, as of right, the flow of the river for the purpose of working their mill. It also appears that the river Wandle

is, and always has been supplied, above the plaintiff's mill, in part, by the water produced by the rainfall on a district of many thousand acres in extent, comprising the town of Croydon and its vicinity. The water of the rainfall sinks into the ground to various depths, and then flows and percolates through the strata to the river Wandle, part rising to the surface, and part finding its way underground in courses which continually vary. The Local Board of Health of Croydon (represented in this action by the defendant), for the purpose of supplying the town of Croydon with water, and for other sanitary purposes, sunk a well in their own land in the town of Croydon, and about a quarter of a mile from the river Wandle, and pumped up large quantities of water from their well for the supply of the town of Croydon; and by means of the well and the pumping the Local Board of Health did divert, abstract, and intercept underground water, but underground water only, that otherwise would have flowed and found its way into the river Wandle, and so to the plaintiff's mill; and the quantity so diverted, abstracted, and intercepted, was sufficient to be of sensible value towards the working of the plaintiff's mill.

"The question is, whether the plaintiff can maintain an action against the Local Board of Health for this diversion, abstraction, and interception of the underground water.

"The law respecting the right to water flowing in definite, visible channels, may be considered as pretty well settled by several modern decisions, and is very clearly enunciated in the judgment of the Court of Exchequer, in the case of *Embery v. Owen* (6 Exchequer Reports, 369). But the law, as laid down in those cases, is inapplicable to the case of subterranean water not flowing in any definite channel, nor indeed at all, in the ordinary sense, but percolating or oozing through the soil, more or less, according to the quantity of rain that may chance to fall.

"The inapplicability of the general law respecting rights to water to such a case has been recognised and observed upon by many judges whose opinions are of the greatest weight and authority.

"In the case of *Rawstorne v. Taylor* (11 Exchequer Reports, 382) Baron Parke, in delivering the judgment of the court, says, 'This is the case of common surface water flowing in no definite channel, though contributing to the supply of the plaintiff's mill. The waters having no definite course, and the supply not constant, the plaintiff is not entitled to it. The right to have a stream running in its natural direction does not depend upon a supposed grant, but is *jure naturæ*.'

"In delivering the judgment of the Court of Exchequer in the subsequent case of *Broadbent v. Ramsbottom* (11 Exchequer Reports, 615), Baron Alderson observes, that 'all the water falling from Heaven, and shed upon the surface of a hill, at the foot of which a brook runs, must by force of gravity find its way to the bottom, and so to the brook; but this does not prevent the owner of the land on which it falls from dealing with it as he pleases. He cannot do so if the water has arrived at and is flowing in some definite channel. There is here no watercourse at all.'

"In the earlier case of *Acton v. Blundell* (12 *Messon and Welsby*, 349), the Court of Exchequer were of opinion that the owner of the surface might apply subterranean water as he pleased, and that any inconvenience to his neighbour from so doing was *damaum abseque injurid*, and gave no ground of action.

"There is no case or authority, of which I am aware, that can be cited in support of the position contended for by the plaintiff, or in which the right to subterranean percolating water adverse to that of the owner of the soil came into question, except the *nisi prius* case of *Balston v. Bensted* (1 *Campbell*, 463), and *Dickenson v. the Grand Junction Canal Company* (7 *Exchequer*, 282).

"In the first of these cases, Lord Ellenborough is reported to have expressed an opinion that twenty years' enjoyment of the use of water in any manner afforded an exclusive presumption of right. This opinion amounted only to the dictum of an eminent judge, followed by no decision upon the point, for the case ended in the withdrawal of a juror, and is directly at variance with the judgment of the Court of Exchequer in the other case, upon which the plaintiff relies, of *Dickenson v. the Grand Junction Canal Company*, in which the court held 'that the right to have a stream running in its natural course is *not* by a presumed grant from long acquiescence on the part of the riparian proprietors above and below, but is *ex jure naturæ*, and an incident of property as much as the right to have the soil itself in its natural state unaltered by the acts of a neighbouring proprietor, who cannot dig so as to deprive it of the support of his land.'

"In the case of *Dickenson v. the Grand Junction Canal Company*, the very question now before your lordship's House arose, and that case is relied upon by the plaintiff as a decisive authority in his favour. The Court of Exchequer was of opinion that the Company, by digging a well and pumping out the water, and so intercepting and diverting underground and percolating water which would otherwise have gone into a stream which flowed to the plaintiff's mill, and was applied to the working of it, had rendered themselves liable to an action for the infringement of a right at common law. In the same judgment, however, the court refers to the case of *Acton v. Blundell*, apparently with approbation, and observes, 'that the existence and state of underground water is generally unknown before a well is made; and after it is made there is a difficulty in knowing certainly how much, if any, of the water of the well, when the ground was in its natural state, belonged to the owner in right of his property in the soil, and how much belonged to his neighbour;' and then further observes, 'that these practical uncertainties make it very reasonable not to apply the rules which regulate the enjoyment of streams and waters above ground to subterranean waters.' But the court, without at all advertent to this distinction which it has adopted, treats the case of underground percolating water as governed by the same rules as would obtain in the case of visible streams and watercourses above; and no remark or comment is made or reason assigned by the court for arriving at a con-

clusion which not only does not seem warranted by the premises previously adopted, but is in effect hardly consistent with them. The plaintiff in that case was held to have a cause of action, independently of any infringement of a right at common law, by reason of the breach of an agreement between the parties and of an act of parliament; and a decision upon the right at common law seems not to have been necessary for determining the suit between the parties. These considerations greatly weaken the effect of the case of *Dickenson v. the Grand Junction Canal Company*, as an authority against the defendant upon the point now in question, but it is an authority in his favour to show that a right to water is not by a presumed grant from long acquiescence, but, if it exists at all, is *jure naturæ*, and that the rules of law that regulate the rights of parties to the use of water are hardly, or rather not at all, applicable to the case of waters percolating underground.

"In such a case as the present, is any right derived from the use of the water of the river Wandle for upwards of twenty years for working the plaintiff's mill? Any such right against another, founded upon length of enjoyment, is supposed to have originated in some grant which is presumed from the owner of what is sometimes called the servient tenement. But what grant can be presumed in the case of percolating waters, depending upon the quantity of rain falling or the natural moisture of the soil, and in the absence of any visible means of knowing to what extent, if at all, the enjoyment of the plaintiff's mill would be affected by any water percolating in and out of the defendant's or any other land? The presumption of a grant only arises where the person against whom it is to be raised might have prevented the exercise of the subject of the presumed grant; but how could he prevent or stop the percolation of water? The Court of Exchequer, indeed, in the case of *Dickenson v. the Grand Junction Canal Company*, expressly repudiates the notion that such a right as that in question can be founded on a presumed grant, but declares that, with respect to running water, it is *jure naturæ*. If so, *à fortiori*, the right if it exists at all, in the case of subterranean water, is *jure naturæ*, and not by presumed grant, and the circumstance of the mill being ancient would in that case make no difference.

"The question then is, whether the plaintiff has such a right as he claims *jure naturæ* to prevent the defendant sinking a well in his own ground at a distance from the mill, and so absorbing the water percolating in and into his own ground beneath the surface, if such absorption has the effect of diminishing the quantity of water which would otherwise find its way into the river Wandle, and by such diminution affects the working of the plaintiff's mill.

"It is impossible to reconcile such a right with the natural and ordinary rights of landowners, or to fix any reasonable limits to the exercise of such a right.

"Such a right as that contended for by the plaintiff would interfere with, if not prevent, the draining of land by the owner. Suppose, as it

was put at the bar in argument, a man sunk a well upon his own land, and the amount of percolating water which found its way into it had no sensible effect upon the quantity of water in the river which ran to the plaintiff's mill, no action would be maintainable; but if many landowners sunk wells upon their own lands, and thereby absorbed so much of the percolating water, by the united effect of all the wells, as would sensibly and injuriously diminish the quantity of water in the river, though no one well alone would have that effect, could an action be maintained against any one of them, and if any, which, for it is clear that no action could be maintained against them jointly?

"In the course of your argument one of your lordships (Lord Brougham) adverted to the French artesian well at the Abattoir de Grenelle, which was said to draw part of its supplies from a distance of forty miles, but underground, and, as far as is known, from percolating water. In the present case the water which finds its way into the defendant's well is drained from and percolates through an extensive district, but it is impossible to say how much from any part. If the rain which has fallen may not be intercepted whilst it is merely percolating through the soil, no man could safely collect the rain-water as it fell into a pond; nor would he have a right to intercept its fall before it reached the ground, by extensive roofing, from which it might be conveyed to tanks, to the sensible diminution of water which had, before the erection of such impediments, reached the ground, and flowed to the plaintiff's mill. In the present case the defendant's well is only a quarter of a mile from the river Wandle; but the question would have been the same if the distance had been ten, or twenty, or more miles distant, provided the effect had been to prevent underground percolating water from finding its way into the river, and increasing its quantity, to the detriment of the plaintiff's mill. Such a right as that claimed by the plaintiff is so indefinite and unlimited that, unsupported as it is by any weight of authority, we do not think that it can be well founded, or that the present action is maintainable; and we therefore answer your lordship's question in the negative."

The judgment of the House of Lords was given July 27, 1859, when the peers, before whom the appeal had been heard, severally delivered their opinions in favour of the defendant, Richards, the secretary to the Croydon Board of Health.

Lord Chelmsford commenced by saying, that "The question in this case is whether the plaintiff is entitled to claim against the defendant the right to have the benefit of the rain-water which falls upon a district of many thousand acres in extent, and percolates through the strata of earth to the river Wandle, increasing the supply of water in the river, and being of sensible value in and towards the working of an ancient mill belonging to the plaintiff. The acts of the defendants, by which the underground water was intercepted and prevented from finding its way into the river, were done upon their own land." And then having proceeded to examine and comment upon the

various leading cases, to some of which I have already referred, he observed, in conclusion: "It appears to me that reason and principle, as well as authority, are opposed to the claim of the plaintiff."

Lord Cranworth briefly described the law as applicable to running and underground waters. He remarked: "The right to running-water has always been properly described as a natural right, just like the right to the air we breathe. They are the gifts of nature, and no one has a right to appropriate them. There is no difficulty in enforcing that right, because running-water is something visible, and no one can interrupt it without knowing whether he does or does not do injury to those who are above or below him. But if the doctrine were applied to water merely percolating, as it is said, through the soil, and eventually reaching some stream, it would be always a matter that would require the evidence of scientific men to state whether or not there has been interruption, or whether or not there has been injury. It is a process of nature not apparent, and therefore such percolating water has not received the protection which water running in a natural channel on the surface has always received. If the argument of the plaintiff were adopted, the consequence would be, that every well that ever was sunk would have given rise, or might give rise, to an action."

"It is said that in this case this is not a well sunk by a particular individual for his own purposes, but a great well which has been sunk, and by which water is raised to a very enormous extent for supplying the whole town of Croydon. That argument does not affect my mind at all, because if it be conceded, as I think it must be conceded, that each and every one of the individuals, residing upon the area, might have sunk a well of his own to supply himself, it seems to me to be exactly the same thing, whether the water is abstracted by one large well which supplies the whole community, or by a thousand small wells, by which each individual of the community supplies himself. In truth, I should think that in all probability the loss of water would be much greater by each individual sinking a well, than by one great well being sunk for the supply of the whole community."

Lord Wensleydale, although he concurred in the judgment of the other peers, yet at some length stated his reasons for wishing that the case might have still undergone further discussion, as so many difficulties presented themselves to his mind on both sides of the question.

Lord Kingsdown expressed his inability to share the doubts expressed by Lord Wensleydale. "I entirely concur," he said, "in the opinion that has been given by the judges unanimously in this case, and for the reasons by which the judgment has been supported; and I think the House is greatly indebted to those learned persons for the admirable reasonings by which they appear to have removed all doubt upon one of the most important questions that ever came under the consideration of a court of justice."

Lord Chelmsford added, in declaring the judgment of the Court of Exchequer Chamber to be

affirmed with costs, that Lord Brougham "entirely concurs in the opinion I have expressed."

The important points which have, by this great decision of the House of Lords, been finally settled, so far as the landowner is concerned, are: 1, that the underground water in the land belongs to the owner of the ground; 2, that he may drain that water, or pump that water out of his land in any direction that he finds the best for its cultivation or enjoyment.

I feel that this decision will indeed lead to considerable improvements in the drainage, the better

cultivation, and the improved health of the country; and, at the same time, I believe that by the exercise of only a little good feeling, by neighbours giving credit to each other for being actuated only by just motives, by avoiding all overbearing demeanour, and disregard of the feelings and the fair interests of others, all these national improvements may be so carried out, as authorised by the decision in *Chasemore v. Richards*, that no right may be violated; no improvements in drainage or water supply stayed; no honest millers or canal owner's property deteriorated in value.

THE HORSES AT HULL.

(FROM A CORRESPONDENT.)

The horse in Yorkshire holds the same place as the pig in Ireland: popular affection swells round it. No worshipper, indeed, on the banks of the Nile could pay a more circumspect regard to the idolized alligator than the Yorkshireman to his horse. This devotion is well merited, and fully repaid. All who have to ride a good hack, or drive twelve or fourteen miles an hour, in other portions of Her Majesty's dominions, hold in particular respect the memory of their northern brethren.

Old and young seem to be possessed by this passion. No topic of conversation is so full; and when all others are exhausted, this is fresh as ever. Every man has his favourites, whose memoirs are common property, and, like the traditions of early times, before the pen of the chronicler had transmitted them in the imperishable pages of history, the achievements on the race-course, upon the hunting field, or the road, with long lines of descent, and noted ancestry, are orally passed down from father to son, and by being constantly reiterated and dwelt upon in public and private assembly, the facts become indelible, and the tendency hereditary. The talented author of *Silk and Scarlet*, just published, has evidently been desirous to give these histories "a local habitation and a name" that shall extend beyond the Humber. So pleasant and easy is his narrative, that no doubt can be entertained as to its speedy circulation.

Had we never known before what the Yorkshire breeders had accomplished, we certainly had a full opportunity of seeing at Hull, for the show was nearly entirely composed of classes of roadsters, hacks, and hunters. We find 211 entries, 37 of which are for agricultural purposes only. At Warwick the balance was very much on the side of "agricultural purpose" horses. They were as 134 to 72 of the hunting and roadster class.

When we compare the 211 horses at Hull with the 206 at Warwick, we are led to conjecture the reason for the disparity. It cannot have been the prize money, for there were only £148 given away amongst exhibitors of horses at Hull; while amongst the same gentlemen at Warwick were distributed £430. A Yorkshireman seems to have an intuitive liking for a horse. Every stripling is

wonderfully knowing in this matter of horseflesh—cares not, indeed, to withhold his opinion; affects a lightness about the lower portion of his trowser legs; fastens his scarf with a jockey cap and whip, a pair of spurs, a galloping horse, a fox's head, or a horse-shoe.

The breeding of horses is the particular hobby of a Yorkshireman; and we are assured that the local shows are, many of them, as large and as good as the country show.

Amongst the stallions for getting hunters we found some very superior animals. All that were exhibited came truly under the class, and were not, as so frequently we have had reason to remark in other shows, foreign to it. Elcott, by Venison, a bay ten-years-old horse, showed some breeding, but scarcely so much to our mind as Spencer, by Cotherstone, a bay horse, seven years old, with those indications of endurance which in this class are everything. Both these animals, however, were sure to arrest attention by their splendid legs, strength hocks, and beautiful tops—all finely proportioned.

Wild Hero, by Young Priam, a five years old bay, well deserved the high commendation which he obtained, having wonderful quarters, fine arms and second thighs, straight flat legs and good feet.

As we have always been of opinion that the Cleveland with two strains of blood were the best foundation from which to obtain size, weight, endurance, and speed, we somewhat demurred to some animals in the class for coaching stallions. The first prize, awarded to a bay horse by Hero, and the second, to Omar Pacha, by Tamor, were well given on the whole. The judges evidently shared our feelings when looking over this class, for they did not give any commendation. The roadster stallion class was well represented: President, jun., by Bay President, a tight, smart bay, four years old, won the first prize well, and Young Wildfire, by Troubadour, a three years old chesnut roan, the second: President, junior was marked by very muscular arms and quarters, with a well-proportioned top. Sir Colin, a brown, five years old, by Prickwillow, highly commended; and Merry Driver, a seven years old horse, by Pretender, presented better points to the judges than we could

find perhaps; for the judges, be it remembered, always have a great advantage over the public, in that they see the animals in motion; and when everything depends upon pace, form has generally become a secondary consideration. Those who judge of them in their quiescence, must merely confirm the justice of the awards, keeping his own particular predilections in the background. Still, it did occur to us that Achilles, a roan five-year-old by Fireaway, and Magnet by Wildfire, merited more notice than they received. The former might well have been the subject of that anecdote which occurs in the life of Sir E. Buxton. Riding, as was his custom, a very splendid hackney in the Park, it attracted the notice of King George IV., who sent a gentleman attendant to enquire its price. Sir Edward, on hearing the message, dismissed the attendant to the king with his card, and the reply that the card bore upon it the name of a gentleman as fond of a good horse as was His Majesty.

No doubt could have been entertained by any with regard to the first award in the class for stallions for agricultural purposes. Taylor's England's Glory, a brown eight years old horse, stands as renowned in his own right as he does in that of his sire, England's Glory, who received the first All England prize, at Windsor, in 1851. At the close of a heavy season he seems fresh as ever, and means well, notwithstanding his prodigious weight. His girth and quarters, arms and thighs are very remarkable. He presents a good type to carry in one's eye, by which to measure other horses. By this measure the eleven competitors in this class were but small—some exceedingly small. Champion, the second prize, owned a very compact and strong, if not a particularly handsome mould; but we were struck with Black Douglas, a very superior style of horse, with evident signs of blood.

Amongst the mares and foals for hunting, the prize mare, Marigold, was particularly remarkable for symmetrical outline and great girth. We thought them all undersized however, especially 305. Spangle was characterized by fine fore legs; and Wallflower by beautiful fashion. 310 was a fine roomy mare, but too short. 312 had substance and room, splendid shoulder, forehand good, and foal capital.

The coaching mares and foals were very unequal. Mr. Todd's by Broby stood first, a first-class five years old mare, of surprising substance. Our attention was also caught by Mr. Bowser's mare: she must breed well, though the foal with her was not a good specimen. There was more fashion about her than any in the class; hocks very strong; great reach of quarters; sound constitution, denoted by a glance at her chest. Mr. Wilson and Mr. Train both showed excellent animals. Nor must Mr. Dennis be forgotten, an unusually long top, and splendid legs.

The prize mare in the class for roadster mares and foals wanted fashion; but her quarters were splendid. Mr. Bowser's black mare, with remarkably fine flat-boned legs, good top, and shoulders well back, deserved commendation; as did Mr. Tindall's; but the beautiful compact, smart mould

of a chesnut mare by Merrylegs (327) specially attracted attention: her symmetry seemed perfect. Merrylegs should get good action; what her's might be we had no opportunity of judging. Of mares and foals for agricultural purposes there were but two specimens—a fine black mare, with very creditable foal, winning the prize.

The character of the two classes for three years old geldings and fillies, for hunting purposes, was very superior. We have scarcely ever seen so much strength and style. For those properties that are looked for on the field, Mr. Walker's prize dark brown by Young Melbourne was very remarkable. She looked up to any weight, and well calculated to live with hounds through any day; and if a well knit frame, a long, deep girth, and well-placed and sinewed legs, do mark a horse for his business, we have a true hunter in Cheerful, by Young Physician. If his sire got many such as him, he certainly won his diploma most creditably: his hocks were the best in the class. Mr. Goston and Mr. Shaw both showed animals that supported the reputation Yorkshire has gained for size and quality, the latter being 16 hands 3 inches. Messrs. Harrison, the only exhibitors of fillies, could only have been more proud of their position had there been more competitors in the class.

We had the good chance to see Mr. Robinson's six years old chesnut hackney in the ring. The sire, Performer, had not his name for nothing. An easy carriage, free as the air, joints blithe and subtle, mouth tender, fore feet thrown in trotting, well out, with a foot that scarcely touched the sod, hind legs gathered well under for propulsion, loin capital; in size not great, but of mould remarkably beautiful. The first prize was well awarded here. The class for four years old hunter geldings or mares was extremely well filled. Besides those distinguished by awards, we noticed Rory O'More, Epicure, and Mr. Holmes's bay.

Lord Hotham's silver cup was awarded to Mr. E. R. Harrison, to whom, with his brother, Mr. C. Harrison, the show owed much of its sterling character and interest. Splendid as was President, and well furnished in all respects which indicate speed, power, and constitution, the latter gentleman's bay mare, by Theon, furnished, if anything, a superior type. We do not remember a more perfect picture in the yard, or one that bore better a critical examination, point by point. She stood a good 16 hands. Phoenix, by Young Priam, is also a remarkable horse; he stands 15 hands 1 inch.

Such shows as these are the great means by which the breed of horses will be improved: they afford the best possible stimulus and guarantee to breeders. The public eye becomes educated, and so educated, that a good horse will always fetch a remunerative price. Farmers will give up breeding £20, £30, and £40 nags, at a great loss; and we should advise all those who do not possess a real taste for the pursuit, to do so immediately, giving their attention to the Agricultural Purpose class, which are born to profit, and so leave the field open to men who can occupy it to their own profit and credit.

MR. RAREY AT THE ALHAMBRA.

"Quot homines, tot sententiæ."

What! never seen Rarey?

So one Saturday, like the dandy who went down in the coal-pit, not that he cared much about it, but merely to say he had been there, we and a great many more found ourselves, about a quarter past twelve, seated in the Alhambra.

The Palace, with the clean straw nicely arranged in the circus, a capital light, a very good audience, not in mourning, as in the evening, but in morning costume, of all colours of the rainbow, with a fair sprinkling of crinoline, and the circus free from all unpleasant odours—which most theatres are not, in the day time, especially where equestrian performances take place—was quite an agreeable surprise.

Mr. Rarey entered the arena, bowed, and said, "He wished to make a few observations, relative to a report of one of his pupils, Cruiser, having worried a man. The fact was, the groom was exercising Cruiser; and some horses he was going to practise on in an adjoining stable 'excited' the horse, and Cruiser certainly did give the groom a severe bite in the arm; horses generally bite pretty hard. They must recollect this was the first accident he had had, and he had been now nearly two years among them; and that Cruiser was allowed to be one of the most vicious horses ever known. He must say that he thought the press had been rather hard on him in making so much of the accident, considering four or five patients were lying at the same hospital, suffering from injuries received from vicious horses, and yet some of the press stated that vicious horses were so scarce in this country that he could not get any to perform on. He did not pretend that he could teach every one his system, for it required nerve, and, like everything else, practice; and even with all the practice in the world, some would never succeed, &c., &c."

Cruiser was then introduced, looking "blooming."

Mr. Rarey informed the company he had only two interviews with Cruiser, since the accident. He then put the horse through the same process—but with much more ease and confidence—as the groom was wont to do every evening at the Alhambra for some months ago—lying down, following, standing still, and advancing when told, &c. While Cruiser was down, and Mr. Rarey was rapping the horse's hind heels together, there was a look about the eye of Cruiser—such a look—with a handful of straw between his nippers, clenched as if in a vice, that put us in mind of Van Amburgh and the tiger—so tame.

Then came a half-bred mare, that did not show anything like vice, went through the business of going-down, heels rapped, drum, &c.; Mr. Rarey repeating parts from his book.

The next subject was a black Galloway, a "model undertaker"—such a mane and tail, with his head reined up so tight, that he had as much liberty with it, as one of his master's men would with the addition of an all-rounder to his white choker. We understood Mr. Rarey to say he had

never seen the gentleman in black before; that the horse was quite master pig at home, and had never been ridden. We noticed Mr. Rarey did not appeal to our sable friend's frontispiece, like he did to the half-bred mare, and as you are instructed in the book, but touched him in a playful manner in the flank, when the brute squeaked, but did not offer to kick, bite, or fight with his fore legs. After several squeaks, Mr. Rarey produced the straps, and a regular set-to commenced, which lasted with the second round (for the plucky undertaker got up again, after being fairly thrown), quite half-an-hour. Mr. Rarey, during a slight cessation of hostilities informed the audience he had three hours with Cruiser the first time he got him down, which seemed to alarm a few ladies and gentlemen in our quarter. The undertaker eventually cried *Peccavi*, in a perfect lather, and both man and horse blowing as if they had had a four-miler. Mr. Rarey feeling, we should say, pretty much like Napoleon after defeating the Austrians, as if he didn't care about such another job, at least for the day. When rapping this horse's heels together, he lashed out viciously three or four times; but with all his vice, some son of Vulcan had managed to nail on a pretty good pair of hind shoes. The horse appeared afterwards to walk very stiff, and trembling with the near fore leg; there was a curious action about the knee and fetlock. We formlance lasted about an hour and three-quarters. I fancied Cruiser's knee was slightly enlarged. The per-

Mr. Rarey is decidedly a very clever cool hand with horses, and for once is worth seeing. As to his system, we don't believe in it. We all know what a mess the gentleman, who was cured of stammering made of "Tha-a-a-at's the ch-a-a-ap th-a-a-at c-u-u-u-red me, when he got 'excited,'" on hearing some one mention the doctor's name in the next box. We all know how a great many ticket-of-leave-men, when they get out of the Reformatory, and have half a chance, get "excited," and are up to their old tricks again. We all know that dogs, confirmed sheep worriers, directly they are out of sight, get "excited" and are after the mutton as usual.

It's the same with Mr. Rarey's system, and we seriously advise "all friends, and the public in general"—as the advertisers say when thanking imaginary customers—if they should have anything to do with these said to-be-tamed animals, to keep their eye-on the main chance; always be on their guard. By such means only will they be likely to prevent horses like Cruiser and the Cretingham Hero from adding more to their list of killed and wounded.

The only difference we saw between Mr. Rarey's and Mr. Cooke's system was, that Mr. Rarey brings the strap of the off fore leg under the horse through the roller by the girth place, and pulls upwards on the near side. Mr. Cooke brings the strap of the off fore leg through the roller over the back, and pulls downwards on the near side.

SCARCITY OF LABOURERS.

An event which we have for some years foreseen and against which many farmers have been making preparation, has this season happened. It has, of course, taken by surprise those who were less provident or observant, and is likely to cause them not only considerable inconvenience, but great loss. We refer to the scarcity of labourers, which is felt this season to such an extent in some districts that, unless hands are obtained, it will be impossible in any reasonable time, to get in the crops, that are already dead ripe, and require immediate cutting. The tangled condition of the corn, from the effects of the late storms, greatly aggravates the evil, by retarding the work of the reapers, even where there are enough of them, whilst it both increases the expense and lessens the produce. To add to the general perplexity, the usual supply of Irish labourers has this season entirely ceased; the improvement of agriculture, the increased quantity of land cultivated, and the extensive emigration which still continues, having created a demand for labour in that country to the full extent of the supply. This failure of the accustomed immigration from Ireland is severely felt in the midland and northern districts, where the farmers have, to a certain extent, depended upon it for help in their harvest-work, particularly in reaping.

The consequence of this scarcity is that in some places the labourers have struck for higher wages, and enormous prices have been given for reaping. We have heard of instances, a few miles from the metropolis, where as much as 25s. and 30s., and in one case even 40s. per acre have been already paid, where the corn was much laid. In Lincolnshire the scarcity of labour is so severely felt that proposals have been made that some of the builders now on strike should go down and assist in the harvest, with an offer of 7s. 6d. per day. The corn there is quite ready, and any further delay in cutting it will be attended with great loss. Every day adds to the mischief, and increases the difficulty of dealing with it.

It does not admit of a doubt that harvest-work in this country is becoming increasingly heavy every year, in consequence of the high state of cultivation to which the land has arrived. This new phase in the existing state of things directs the farmer unmistakably to the only course that will afford a remedy for the evil, namely, an increased employment of machinery in the operations of husbandry and especially those of harvest work. We shall, therefore, expect that before another season there will be few farmers who are not provided with one or more of Burgees and Key's mowers and reapers, according to the size of their farms. What would not the Lincolnshire men, for instance, give for a reaper at the present time? Yet they might, with a little reflection, have foreseen and prevented the dilemma in which they are placed, by furnishing themselves with those grand auxiliaries,

Our observations, however, if they have been suggested by the state of the harvest and of the labour market, apply almost equally to our agriculture, in all its branches and at all seasons of the year. High farming and increased flocks and herds call for more attention and more labourers, and will soon necessitate the still greater extended use of machinery. And not only this, but there is an increased and increasing demand for labour in every other department of industry as well as in agriculture, as may be judged from the enormous augmentation in the exports and imports of the first six months of the present year. It appears that the exports have amounted to *sixty-three millions*, and the imports exhibited a corresponding addition. Ten or fifteen years ago the whole of the exports for the year amounted to only fifty millions, and now the export of cotton goods alone amounts to forty millions, and the yearly exports to 126 millions. It is evident that so enormous an increase in our trade, both at home and abroad, must employ a corresponding number of hands to conduct it, besides those employed in the manufactories, the shipping, &c. Then there is the increase of men engaged on railways, in the dockyards, in the army, and the navy. All these additional hands must be drawn from the rural districts, and when added to the many who have emigrated, will fully account for the present deficiency.

The farmers must not suppose that the difficulty they now suffer under is temporary, and that things will ever revert to their former channel in regard to the supply of labour. We do not hesitate to affirm *that* is an impossibility arising out of the new conditions in which agriculture is now placed. She has been the last to feel it, because she has been in the rear of every other in the race of improvement. In commerce and manufactures they have been long ago driven to the use of machinery by the sheer want of sufficient hands to conduct their operations; and now the agriculturists' turn is come, and there can be no safe hesitation about what is to be done, if they intend to have their land cultivated in a proper manner and their crops housed in proper time. Machinery is the only remedy—the only resource in this emergency, and the sooner it is universally adopted the better for both master and man.

We regret to hear that some of the latter are endeavouring to get the upper hand by imitating the associations in other branches of industry, in "striking" for higher wages. We are quite aware that in many districts the general rate of wages are lower than we could wish. This state of things cannot much longer exist, and whilst we would hope the farmers will secure the good will of their men by a more liberal remuneration, and a more kindly consideration of their condition and wants, we would, on the other hand, counsel the latter to wait patiently the

course of events, which will assuredly place them ere long in a better condition, and on a par with the operatives in other employments.

Let the labourer not suppose, either, that he can effectually resist the introduction of machinery. We have heard with considerable surprise of a district in a midland county, in which no farmer has yet been permitted by the labourers to purchase a thrashing machine, and the employers have been foolish enough to yield to the intimidation. This is but a renewal of the old struggle between the hand-loom weavers and the steam-power looms. We should like to see the operative manufacturer who would wish to return to the old system again. And thus will it be—thus we may say it *is*, with the agricultural labourers. Where machinery has been generally introduced upon the farm, there the men are the best satisfied with it because they find that it is

beneficial to them, both in a physical and a pecuniary point of view, and still more morally and intellectually. We were told recently of a farmer who used machinery in every kind of work in which it could be introduced, who was requested by a gentleman to send him a man who knew something of a steam engine. He sent him one of his common labourers, who had taken his turn with others in the management of his employer's steam machinery. He received a letter from his friend some days after, requesting that he would allow him to engage with the man permanently, for he found him so useful and intelligent that he would willingly give him a pound a week wages. We offer this instance of the importance of machinery to the labourers as well as to the farmer, to show that the former resist their own advancement in life by setting their faces against its use.

THE PROGRESS OF THE HARVEST AND ITS PROBABLE RESULTS.

The onward progress of the harvest, slow though it has been, on account of the scarcity of hands in many districts, is beginning to foreshadow its probable influence upon the markets of the coming season. At present, however, enough has not been developed of the condition of the crops to enable the merchant and the miller to form a sound judgment of the result. At the same time, the accounts from various districts give anything but a favourable view of the yield of the wheat crop. In some districts there is an undoubtedly full average, but in others a premature ripeness has injured the quality and reduced the quantity of the grain. This effect has been aggravated by the heavy storms, which in various parts of the country have inflicted great damage upon all the crops, and injured both quality and yield. It is estimated by many good judges that the weight of the wheat this season will average at least from 3 to 4 lbs. per bushel less than last year, which will make a difference in flour of from 35 to 45 lbs. per qr. This will amount, in round numbers, to at least two million sacks of flour, taking the average produce at 16 million quarters, which, even if we get an average, will materially reduce the supply, and give the miller more work and less profit. On the other hand, it is universally acknowledged that the farmers throughout the country hold the largest stock of old wheat they have had at this season for ten years: so that this will fully compensate for whatever deficiency may be found in the weight of flour per quarter. We have also a large stock of foreign wheat on hand, both in London and at the outports, that will still further help to make up any requirements.

In France the case is different. The crops in the south have been housed, and are reported to exhibit a large deficiency in the acreage yield. It is estimated that upon the entire crop of wheat in that country there will be one-fourth less than an average; so that it is not considered there will be much to spare for exportation. It is probable, however, that the French

millers will still ship flour to England, when they can do it at a profit, even with the chance of having to fetch it back again at an advanced price afterwards. There is also in France, as here, a large stock of old wheat in the hands of the farmers of Normandy and Brittany, whilst supplies from the Black Sea can be readily obtained, when the price and the sliding-scale will allow. At the commencement of the harvest there was a considerable advance in price in most of the French markets; but a reaction has since taken place, although the trade still continues ~~flour~~ *flour*, and it is not likely that prices will recede.

The crops of spring corn in this country are reported better than was expected, with the exception of those on the very light lands, where the drought and heat have prematurely ripened them. On the strong and mixed soils the barley is good, and the oats a heavy crop. On the other hand, in Ireland, especially in the southern parts, the oats are more or less a failure, from the excessive drought, which was much more severe and lasting than in England. In many fields the *oats, in full ear*, are not more than four inches high. The potatoes also have suffered severely, and will be very small in size. A very large breadth, however, was planted, and there will still be a good supply. In England the disease has appeared in many districts, and some fields have been ploughed up, the crop not being otherwise worth raising. The winter beans are likely to turn out well, but the spring-sown will be nearly a failure. The harvest has been somewhat retarded by the rains that have fallen, but the damage has been confined to the sprouting of a few fields of barley, and this will have but little effect upon the general yield.

The harvest in the United States does not turn out quite so abundant as was expected. Some samples of new wheat that have been received from thence do not display the usually high quality. At any rate, whatever may be their produce of wheat, it is not likely that our prices will be low enough to enable their merchants to

ship to this country at a profit. In Canada West the wheat crop is larger and more productive than ever was known; and although on the older cultivated soils the weevil and midge fly have committed their customary ravages, the new lands in the "far west" yield an unusual abundance—say from twenty-eight to thirty-five bushels to the acre. So there will be a considerable surplus to spare, if the price in Europe will allow it to be shipped to a profit, which, however, is doubtful.

In the North of Europe, the crops are not reported to be so good as usual, especially rye, which is advancing in price, there being on hand large orders from Holland and Belgium for that grain. The wheat trade at Hamburg is heavy, taking the tone from Mark Lane, but the stocks of old corn are not large.

Upon the whole, it is probable that, with a good supply of both old and new native wheat, and a heavy stock of foreign in the market, we shall not see much fluctuation in price on this side of Christmas. By then the produce of the harvest will be more accurately known, and the farmers will be better able to form their opinions of the future prospect. This will apply to spring corn as well as wheat, for the delivery of good malting barley will probably be large, whilst of inferior qualities there is stock on hand, with a prospect of a considerable importation. Of oats, too, the importations from Russia, &c., have for some weeks

been very heavy, nearly 150,000 qrs. having been already received at the port of London during the past three weeks. What the import will be when the new crop of Northern Europe comes in, it is too soon to calculate; but if that of Northern Russia is equal to last year's, we shall certainly have a large accession. The growth of oats, however, in this country is usually confined to the requirements of the farmers' own consumption, other grain generally paying better. The general demand, too, for oats is always large, and any deficiency in the foreign supply would inevitably raise the price, as that from Ireland will be much less than usual. It is highly probable that the failure of the rye crop in Northern Europe will render a larger consumption of oats necessary, very little wheaten bread being eaten in the Baltic provinces and states.

In Northern Italy, the late war, having made some havoc with the growing crops, there will be a greatly increased demand for bread corn in that quarter. They will, however, be able to obtain supplies from Trieste, or from the Black Sea, if the crop of Southern Europe is deficient. Austria seldom grows much beyond her own consumption, and has no other water outlet than Trieste and the Danube, whilst the absence of roads, railways, and canals render it impossible to get the grain to a profitable market, either to the interior German states, or seaward.

A FARM OF FOUR ACRES.

Playing at farming is, proverbially, an expensive amusement. There are people who to this day shake their heads over Tiptree, and doubt very much whether it really can pay. There are others of the worthy Alderman's compeers who honestly confess that it does not, and who annually debit so much to the farm, just as they would for a stud of hunters at Tring, a yacht at Erith, or a manor in Sussex. It is more or less a luxury. It is an agreeable occupation, no doubt; conducive to health, exercise, and so on. But the amateur must be a very sanguine man when he expects to actually make anything by it. In fact, the old story is all the other way. He is laughed at and robbed by the country-men. He eats bread of his own baking, and drinks beer of his own brewing, at about double the cost for which he might buy it. He has a famous litter of pigs, yet more in-famous for their continual invasion of the flower-garden. He has prize poultry, warranted good layers, but whose eggs, somehow or other, can never be "found." His hayricks are sure to be heated. There is invariably something wrong with the implements just when they are most wanted. The very Suffolks are jibbers. The Southdowns have got the foot-rot; and the short-horn cow is hardly ever in milk, and never really in calf.

Of course the more limited the occupation, the greater, proportionately, is the outlay. Indeed, one of

the "principles" of these times is that, of all the errors of our system, there is none worse than that of small farms. The merest tyro even had better go boldly into the business. He will be, so, compelled to engage a good foreman, who may gradually initiate his master in the mysteries of the art. It is only when citizen Cincinnatus is his own manager that he is thoroughly at the mercy of the elements and the natives. With, then, all such foreshadowings of failure, the new-comer is too often content enough with his kitchen-garden and his strawberry-beds. He gladly covenants with a neighbour for the tenancy of the bit of land, buys his saddle of mutton as usual of Tucker in the Strand, has his table-ale from the Romford Brewery as before, and scarcely knows of anything more home-made than the ginger-wine he gets at the grocer's, or the household-bread he buys in the City.

And yet, in the face of all this, the charms of a pastoral life are still very perseveringly put before us. Although Miss Mitford and "Our Village" may have lost something of their zest and interest, the argument has by no means died out. In truth, those who have since taken it up have only been the more earnest in the lesson they would teach. We learn it no longer inferentially, but are told methodically enough how to set about the curious art of Agriculture. During this very year of 'fifty-nine Mr. Alderman Meehl, under the countenance of the great publishing house of

Routledge, tells us "how to farm profitably," for two shillings. Not to be out-done, the yet more famous firm of Longmans introduce another well-known amateur, Mr. Lawrence, of Cirencester, with "A Haudy Book for Young Farmers." And for a third, Messrs. Chapman and Hall announce, "Our Farm of Four Acres, and the Money we made by it."

It is noticeable that, so far, the last-named of these three handy books is by far the most popular of them all. The "Farm of Four Acres" is being continually out of print; for it has already, in a very short period, run through no less than six editions. More remarkable still perhaps, it is the work of a lady's pen; and, most wonderful of all, the book is really what it professes to be. Despite the conventional saws we have all treasured up so religiously—of the pleasures of eating your own pork at half-a-crown a pound, and drinking fresh milk at a shilling a quart—in the very face of so manifest an absurdity as attempting to make three or four acres of land pay for cultivation, it has yet been done. That this has been accomplished under peculiar circumstances, we are quite willing to allow. That the great secret of "minding your own business" might not be quite so practicable to all others, is equally apparent. But it is still a very charming book. And more than this, it is a very useful one—of value to many far beyond the mere circle of amateurs for whom it was especially written.

The production, as we have said, of a lady, it is more especially, perhaps, addressed to the sex. It is, moreover, the work of one who has been almost entirely self-taught. But our farmers' wives, even, need not be above studying it, for all that. It treats almost altogether of those minor matters in which "the missis" is chiefly interested. And there are good homesteads yet, within our knowledge, where the bread is apt to be sour, the beer hard, and where the butter won't "come." What a terrible business of itself is that of the dairy, and what continual care and attention it requires! Who does not remember when poor Jenny, who had got leave to go into town in the afternoon, fairly broke down after four hours' churning, and gave up her holiday, with the butter, in "a good cry"? People tell you there is no such want

at this very time as a good dairy-woman. They are really not to be had. It is amusing and suggestive to see how our fair friend of the Four-acre Farm got over the difficulty. She did it herself. Indeed this very practical plan promises to come fast into fashion. It is the one great point in the money made off the four acres, while here is an instance of its yet further application:—

"A friend of the writer's, a lady of large fortune, and mistress of a very handsome establishment, said, when speaking of her dairy, 'My neighbourhood has the character of making very bad butter; mine is invariably good; and I always get a penny a pound more for it at the 'shop' than my neighbours. If I have occasion to change the dairy-maid, and the new one sends me up bad butter, I tell her of it. If it occurs the second time, I make no more complaints; I go down the next butter-day, and make it entirely myself, having her at my side the whole time. I never find I have to complain again. She sees how it is made, and she is compelled to own it is good. I believe that a servant who is worth keeping will follow any directions, and take any amount of trouble, rather than see 'missus' a second time enter the kitchen or dairy to do her work.'"

Let us briefly enumerate the successful experiments tried on this now-famous farm of four acres. There were, then, two cows kept, and butter made—pigs fattened, and bacon cured—poultry and pigeons reared—bread made—a kitchen garden famously managed and provided—and a pony, a wonder in condition to look on, and, to carry out the character, of course a very marvel of an animal to go. There have been, so far, only two positive failures or losses in the whole business. The one was in the culture of grapes, which, however well they grew, did not pay for forcing. The other more decided break-down was the attempt to keep tame rabbits—about the very nastiest things to be had about a house, and that we were really glad to see would not live at the Four-acre Farm.

We hold this little book to be susceptible of a far greater effect than was probably ever intended. The whole story is quite admirable, if only for the manner in which it is told. But, beyond this, it may teach most of us many a useful lesson. The temper with which it deals with the prejudices of servants and the tricks of strangers is in itself quite a model for either master or mistress. Like the lady with her dairy-maid, "if you cannot do it, I can," has overcome almost every trouble—though the cream be sleepy, the cows skittish, or the solution of the difficulty depend, in bucolic phrase, on "lots o' things." If "Our Farm of Four-acres" be only read aright, the drawing-room and the dairy need not be quite so distant with each other; while the healthy recreations of a rural life may be made to become almost as proportionately profitable.

THE PRESENT CONDITION OF AMERICAN AGRICULTURE.

I said in my April communication that the statistics of book publishing and newspaper circulation, and common schools in the United States, would relieve us from the charge of popular ignorance. I propose now to show you how the general intelligence of our rural population is in part insured by the establishment of "district" or "township" libraries; and to remark on the condition of our agricultural press. Notwithstanding the attention which has always been given in this country to popular education, it is a fact, which has only within a few years attracted the consideration of our legislators, that although a majority of the people are engaged in agricultural pursuits, no special attention was given—either practical or theoretical—to the science of

agriculture. Farmers' sons in the district school are taught more of astronomy than farming; and know better what are the boundaries of the Turkish Empire, than how to improve the soil within the boundaries of their farm lines. Those, however, who have watched the progress of things feel confident that a change will come, and that we shall not always look in vain for agricultural teachings in our schools, and agricultural books in our district libraries. The large and increasing demand for these books, and the wide circulation of agricultural journals, are producing an effect in the farmers' families in every part of the country, and this, outworking, will ultimately ensure the great public reform which we anxiously await.

Public schools having been established by State legislation, and federal appropriation of public land, the next step naturally suggested was, that district libraries of works upon history, biography, travels, discoveries, and inventions, and kindred topics, should be founded; that, having gratuitously educated the children of all classes, the poor as well as the rich, they might not be prevented by want of means from increasing their fund of information after leaving school.

New York, with a liberality worthy of so great a State, was the first to grant this precious boon to her rural population. In 1837 the Legislature voted an appropriation to purchase a set of Harper's School Library for each school district in the State, of which there were 10,000. The libraries containing about forty works of the character above described, were sold to the State for twenty dollars (£4) each, which included a plain deal case to contain them, as well. The first appropriation of 200,000 dollars, (or £40,000) was followed by like sums for three years, and has been further increased by annual grants of 55,000 dollars (£11,000) for new supplies; but this sum, divided among so many districts, becomes a pittance to each, scarcely worth applying for. When these public libraries were founded, there were but three works on agriculture published in this country, and if we wished to know what English farmers had done, or were doing, we were forced to send to London for a few books that even there were on sale. The three works referred to were Judge Buel's "Farmer's Instruction"—a first and second series—and Armstrong's "Essay on Agriculture," written originally for the *Albany Argus* newspaper, when Judge Buel was its editor, by the Secretary of War, during Madison's administration. Two additional volumes of the "Farmer's Instructor" were prepared for the school libraries after the death of the lamented Buel; but these few comprised, with the exception of stray pamphlets, perhaps, and republished fugitive pieces, our whole agricultural library twenty years ago.

Massachusetts, whose common school system is the best in the country, in 1839, followed the example of New York, and to the cause of popular education added this new aid of school district libraries. Her laws require that every town, or district, containing fifty families shall be provided with a school or schools, equivalent in time to six months for one school in a year; if containing 100 families, twelve months; 150 families, eighteen months; and the towns are required to raise the sums of money necessary for the support of the schools in the same manner as the other town taxes. The result is shown in the tables of our last census. Massachusetts, an old and thickly settled state, had within her boundaries but 1,055 natives who could neither read nor write. Reversing the picture, we find Virginia, a much larger and once more opulent state, which has cared but little for popular education, with a total of 75,868 native-born citizens unable to read or write!

The young state of Michigan, the first to put into actual operation an agricultural college, followed upon the action of Massachusetts and New York, in the matter of public libraries for her school districts, by giving to each township the sum of fifty dollars (£10) annually, to be expended by the "School Commissioners," who select such as they may think most suitable. Of these townships there are 1,500 in the State, and each embraces from six to ten school districts. Indiana in 1854, and Ohio in 1857 followed suite, the former by appropriating for two years the sum of 300,000 dollars (£60,000), and until within a short time she gave annually 80,000 dollars (£16,000), but some misapplication of the fund being suspected the annual grant has

been withheld, and is not yet renewed. Ohio appropriated 80,000 dollars from the first. In both these States the Superintendent of Public Instruction, an officer elected biennially by the people, has the power delegated to him to select and purchase such books as he may think most suitable, and the libraries are all delivered to his address at the State capital, to be by him afterwards distributed to the different districts. These States, likewise, are divided into townships of several school districts each. Last year the contract for furnishing the 80,000 dollars worth of books for the Ohio libraries was awarded to Messrs. Appleton and Co., publishers, of this city, by a special clause, of which they were bound to furnish them, comprise twelve per cent. of the best agricultural books.

Connecticut, a few years since passed a law that any district raising a sum not to exceed fifty dollars (£10), should have a like amount from the State Treasury, to expend in books, which were to be selected from a list recommended by the Superintendent of Instruction. Of these not above three per cent. were agricultural.

Illinois, seeing the liberal legislation of her neighbouring states, Ohio, Indiana, and Michigan, passed a law, authorizing the school directors, of whom there were three in each of her ten thousand districts, to select and purchase a library, for the payment of which they should assess a special tax upon their own district. It was made the duty of the State Superintendent to prepare an advisory list for their guidance; and he, being fully alive to the importance of agricultural books to agricultural men, recommended the list of Mr. A. O. Moore, of New York, with the addition of standard works on biography, travels, history, fiction, &c. The list of Mr. Moore comprised agricultural books alone; and those which were placed in these libraries treated upon draining, the breeding and care of domestic animals, rural architecture, fruit, vegetable, and flower culture, chemistry, bee culture, and all the departments of farm economy, making in all about thirty per cent. of the books in the library. This excellent example it is hoped will be followed by other States; if it should, the result can only be of great importance to our country.

The new state of Wisconsin, away west of the Father of Waters, and even Kansas, who has scarcely emerged from the fierce struggles and bloody scenes which marked her birth, are giving attention to this important matter; the former has actually appointed a commissioner to recommend a suitable plan for the speedy establishment of district libraries.

It will, no doubt, be interesting to you to know, that despite our bad farming, there is so considerable a demand for agricultural books, as to support an establishment exclusively devoted to their production. This is more than can be said of any Continental State, more even than your great kingdom can boast; and we submit with all deference whether "the present condition of American Agriculture" be not worthy the investigation of your intelligent men. A brief sketch of the origin and present condition of our agricultural publishing house shows—that prior to 1847 there was that lack of agricultural literature in this country, which I have previously explained. In 1843 Messrs. Saxton and Miles, booksellers, published the second volume of the *American Agriculturist*, a weekly journal devoted to the farming interest, and in 1847, one of the editors, Mr. A. B. Allen, wrote a book on Domestic Animals, the publication of which was undertaken by the above-mentioned persons. His brother, Mr. R. L. Allen, two years later, published a work entitled "The American Farm Book." Republication was made of "Stephens' Book of the Farm," "Thaer's Principles of Agriculture," "Johnston's Agricultural Chemistry," and other European works of celebrity. Those were followed in

pretty rapid succession by American productions, and the firm of Saxton and Miles being dissolved, Mr. C. M. Saxton continued the business on his own account, confining himself to agricultural publications. In 1855, when Mr. A. Moore entered the firm, there were fifty books on the list. In about two years the interest of Mr. Saxton was bought by his partner, who continues the business alone. During the last two years he has published twelve excellent agricultural works, all by American authors, and one of them "Downing's Landscape Gardening," is embellished with elegant steel plates, by our best engravers and artists. To give you some idea of the circulation of agricultural books amongst us, I may mention that of Dadd's "Horse Doctor" 20,000 copies have been sold; of "Youatt on the Horse," 23,000; "Youatt and Martin on Cattle, 10,000; "Olcott's Sorgho and Imphee," 4,000, in a little over a year; "Linsley's Morgan Horses," 5,000 in six months; "Downing's Landscape Gardening" (new edition), 3,000 in three months; "Herbert's Hints to Horsekeepers," 2,000 in two months; and of the other books on the list many thousands annually.

I have been to some trouble to obtain a correct estimate of the number and estimated circulation of our agricultural papers, and give the result below. It is almost unnecessary to divide them into those published in the slave and free States, for the proportion of the former is infinitively small; but, perhaps, in that way you will get a correct idea of the comparative enterprise of the cultivation of the two sections. The account stands thus:—

FREE STATES.			SLAVE STATES.		
	No.	Circulation.		No.	Circulation.
Maine	1	5,000	Kentucky	2	11,000
Massachusetts	4	44,750	Maryland	1	8,500
Connecticut...	1	5,000	Georgia...	1	8,000
New York ..	8	181,050	Virginia...	1	3,000
Ohio	2	18,000	Alabama...	1	1,750
Illinois	2	12,000			
Michigan....	1	5,000			
Wisconsin...	1	9,800			
Iowa		3,000			
	21	233,600		6	32,250

Besides these, a few have been commenced within a few months past; but their circulation, even their existence, is too problematical to be taken into account. It is quite possible that this estimate may be incorrect, but if so it will, I think, err in making the number of copies less, rather than more, than the mark. It should be observed that the papers published in New York and other northern and eastern States circulate largely throughout the east and west, and to some slight extent at the south; but you cannot fail to observe the extremely small support given to agricultural papers by the planters of the Southern States; a circumstance to be in part explained by the statistics of public education, as set forth in the last Federal Census. That Virginia, for the settlement of whose domain Raleigh laboured so long and so earnestly, and which was once the queen of all the sisters of the confederacy, should with 75,000 illiterate inhabitants, and but 3,000 copies of her agricultural paper in circulation, be reduced to the very verge of sterility and decay, will surprise no one who has studied the inevitable consequences of cultivation by slave labour.

The first agricultural paper in the United States was the *American Farmer*, established at Baltimore, Maryland, in 1819, by J. S. Skinner, and sold in 1829, for

20,000 dollars (£4,000), a large price for an agricultural paper at that early date. The *American Farmer* has been regularly published up to the present time; but Mr. Sands, longtime its editor, has recently left it, and commenced a new publication of a similar character. The *New England Farmer* issued in 1822, by Thomas G. Fessenden, as an eight page quarto, was sustained with varied fortune, until in 1846 it was discontinued, and from its ashes the present journal of the same name—from which I see frequent quotations on your miscellaneous page—sprang into existence. This paper is at present owned by Mr. Joel Nourse, the senior partner of the great agricultural manufacturing firm, and under his business management is very successful, having attained a circulation of 27,000 monthly and weekly copies. The next paper in order of establishment was the *New York Farmer*, started at the little town of Huntington, Long Island, by Mr. Samuel Fleet, continued for many years, sold to Mr. D. K. Miner, who secured the services of Mr. Henry Colman, as editor, until, finally, after many mutations of fortune, it went the way of the earth, and is no more. In 1831 Mr. Luther Tucker, almost our oldest agricultural editor and publisher, established the *Genesee Farmer*, at Rochester, New York, in the midst of one of the noblest grain districts in the world. At the end of the first year there were but 600 names on the subscription list; but acting on the principle of "Don't give up the ship," Mr. Tucker persevered, and succeeded. After a few years, weekly and monthly parts of the paper were issued, the circulation always increasing, and in 1839, in the natural order of things, the list had swollen to 19,000 subscribers. In this year the useful career of Judge Buel terminated with his death, and Mr. Tucker going to Albany, purchased the *Cultivator*, established in 1833, of Judge Buel's heirs, and united his *Genesee Farmer* with it. The *Cultivator* is still in existence, and published by the same person. The place left vacant at Rochester by the transfer of the *Genesee Farmer* to Albany was filled by the establishment of a paper bearing name of *The New Genesee Farmer*, but the distinctive appellation was afterwards dropped, and as *The Genesee Farmer* it is at this day in active existence; edited and published by Mr. Joseph Harris, a countryman of yours, who studied sometime with Mr. Lawes at Rothamsted.

Ten years ago Professor J. J. Maper issued in this city the first number of *The Working Farmer*, a paper which he designed to make the exponent of the principles of scientific agriculture, keeping pace with the discoveries and application of new processes in Europe more nearly than did his contemporaries. An analytical chemist of large practice himself, and having a strong bias for rural experiments, he was an early champion of the analysis of soils, the subsoil plough, under-draining, and more recently the Liebig theories of manures. He has, of course, met with much opposition, as each novelty was broached in turn; but has had the satisfaction of seeing each one of these hobbies "generally received." More recently he has put forth a new theory of the "progression of ultimates by their use in organic nature." He claims that from the formation of first soil from the debris of rocks, to the present time, the ultimate particles of matter by frequent use in vegetable and animal organisms have been refined, so that the manurial effect of a given quantity of potash or other mineral in the body of a man, is to-day much more intense than that of a like quantity taken directly from the feldspar or other rock, pulverized, and applied to growing crops. This doctrine is at present ridiculed by some, and dissected by others, but it is quite possible that experiments here and elsewhere will ultimately prove the Professor to be right.

PATENTS FOR PLOUGHS AND LAND-TILLAGE.

Occasionally we have given notices of inventions relating to "Steam Culture;" and we now proceed in order to those which still remain for review.

The patent of Mr. J. A. Williams, of Blaydon, Wilts, of date 8th May, 1855 (No. 1,030, price 1s. 4d.) has reference to an arrangement of machinery by which ploughs or other cultivating implements may be dragged over the land by the power of steam. There are two long narrow frames—both movable on wheels—employed, placed opposite each other at different ends of the field, the space between them being that which is to be ploughed or otherwise cultivated. One of the frames contains the engine, which is of the common portable class; this gives motion to the two drums or windlasses placed at the opposite end of the framing, one of which winds while the other unwinds the traction rope. The quick motion of the engine is changed to that of the slow motion of the windlass by any suitable arrangement of bevil gearing, this being driven by a driving belt passing round a suitable pulley on the engine. To the side of the framing nearest to the land to be ploughed a table or beam is secured; this contains a series of holes, placed equidistantly, corresponding to the width of the furrow. The framing placed at the opposite side of the field is firmly secured in position by shores or ropes, and carries towards the land side a similar table to that carried by the engine and windlass framing, and provided in like manner with holes. The use of these holes is to place the stems or axes of guide pulleys in, over which the traction rope is passed. The second framing—placed opposite to the engine and windlass framing—is provided at one end with a large horizontal guide pulley. The frame carrying the cultivating implement is hauled to and fro between the two frames; the guide pulleys being advanced, each time the ploughs are drawn across the space between the two framings, a certain number of holes in the table, according to the number of furrows made at one time. By this arrangement the framings are not required to be moved till the whole breadth of land included in their length is ploughed up. The ploughs or cultivating implements are attached to a small carriage, giving them an independent action from the strain of the rope or chain. This is attained by connecting them to the carriage by short lengths of chain, the carriage running on wheels, and being provided with a notched bar by which the draught is adjusted. Above the horizontal pulley, on the second framing, a standard is fixed, supporting a signal pole, which is turned by a handle attached; a bell is also attached to the pole. The object of the bell is to draw the attention of the engine-man in the windlass or first framing to the signal, which is operated upon just before the ploughs or cultivating implements have arrived at the farther end of the field.

Supposing the space between the two framings re-

quires to be harrowed, to the carriage frame the harrow (*a*) is attached, and the hauling rope (*b*) to the centre of the notched draught bar. The hauling rope (*b*) is passed over a guide pulley (*c*), the axis of which is placed in one of the holes of the table of the windlass frame; it is then continued along the table, passed between two fixed guide pulleys (*d* *d*), and from thence to the first winding chain (*e*). To the end of the draught bar of the carriage frame, next the unharrowed land, an intermediate rope (*f*) is attached; this is led off in the contrary direction of the hauling rope (*b*), passed over a guide pulley in the table of the second framing, and from thence to the horizontal pulley; the end of the rope (*f*) is finally attached to the end of the second hauling rope (*g*). As the line of draught of the second hauling rope (*g*) coincides nearly with the second winding drum (*h*) in the windlass framing, it does not require a guide pulley to pass over, but may be led directly to the second winding drum (*h*). The first winding drum (*e*) is then put in, and the second winding drum (*h*) out of, gear. The drum (*e*) put in motion by the engine, hauls in the rope (*b*), and with it the carriage frame with its attached harrows: the second rope (*g*) is at the same time uncoiled off the second winding drum (*h*) through the action of the intermediate rope (*f*), which is attached to the opposite side of the carriage frame. The first traverse being thus completed, the engine is stopped, and the first hauling rope (*b*) and intermediate rope (*f*) are disengaged from the carriage frame, which is then turned round, reversing the position of the harrows attached to it. The intermediate rope (*f*) is now hooked on to the carriage frame, and becomes the hauling rope, while the hauling rope (*b*) is attached to the opposite end of the carriage, and corresponds to the intermediate rope (*f*) of the first traverse. The first winding drum (*e*) is then put out of, and the second winding drum (*h*) into, gear. The engine is now started, which, actuating the second drum (*h*), pulls in the second hauling rope (*g*), intermediate rope (*f*), and with it the carriage frame and harrows; the first winding rope (*b*) now acting on the intermediate rope being uncoiled from the first winding drum (*e*). Just before the harrow reaches the second framing, the attendant rings the bell to attract the attention of the engine-man on the first framing. The signal is then turned, which warns the engine-man to stop the engine; by which time the harrow has reached the end of its bout. The guide pulleys are now to be changed, to suit the line of the third traverse. The operations here described are continued until a breadth of land equal to the entire length of the engine and windlass-framing is cultivated. The two frames are then passed forward so as to place between them a second portion of unploughed land. This shifting of the engine and windlass framing is effected by the engine—a rope being

attached to one of the winding drums, passed over pulleys, and finally attached to a strut or post fixed in the ground at a considerable distance ahead. This affords a purchase, by which the engine can advance the framing the distance required. The second framing is then pulled by horses or other means, till its position corresponds to that of the windlass framing.

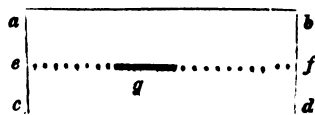
Mr. Williams, in the same patent, describes an arrangement of apparatus adapted for ploughing in what is termed "towards," that is, with ordinary ploughs in place of one-way ploughs, for which description of ploughs the arrangement just described is applicable. For this second mode of working, the two framings are not placed exactly opposite each other, but one is in advance of the other a distance equal to the whole length of the framing; the distance from the outer end of one framing (*a*)—that which supports the engine and winding drum—to the furthest end of the second platform (*b*), being equal to the width of the land to be cultivated; the position of the second framing (*b*) is reversed so as to bring the horizontal guide pulley in a line nearly with the second winding drum (*c*) of the first framing (*a*). To the carriage (*d*) three ordinary ploughs are connected, one being behind the other, to admit of an independent motion. The ploughs being drawn across the field up to the second platform (*b*) by the power of the engine, through the medium of the second winding drum (*e*), the intermediate rope (*f*) is disengaged, and the ploughs and carriage drawn to the opposite side of the land by horses or other means. The hauling rope (*g*) is then by a horse or other means uncoiled from the first winding drum (*h*), which, for this purpose, is thrown out of gear. The hauling rope (*g*) is then in readiness for the second or return traverse of the carriage frame with its attached ploughs. The guide pulley is then fixed in its proper aperture in the windlass frame, the hauling rope (*g*) attached to the carriage frame, the first winding drum (*h*) put into and the second drum (*e*) put out of gear. The first drum (*h*) is then put in motion, pulling in the rope (*g*) with its attached frame and ploughs; the intermediate rope (*f*) and second winding rope being uncoiled from the second winding drum (*e*), to be in readiness for the third traverse. The operation proceeds thus until the piece of land has been entirely ploughed, the last traverse being completed in the centre, each traverse being made on each side alternately. On the completion of the land, the frames are moved so as to bring a second breadth under operation.

The ropes are wound with regularity on the winding drums by the following arrangement:—In front of the winding drum a beam is carried along: this affords a bearing for a second lever, which works in a centre, and is capable of being moved from side to side, the sweep of the arc which its lower end describes being equal to the length of the barrel of the drum. The lower end of the lever carries a fork, to each side of which is fitted an antifriction pulley, for the purpose of preventing the chafing of the rope as it passes between the fork of the hand lever. When the rope is being wound on to the drum, the attendant moves the hand

lever gradually from one side of the drum to the other, the fork of the lever, as it traverses the entire width of the drum, laying a coil uniformly over its surface—say, from right to left. The hand lever is then moved in the contrary direction, laying a coil from left to right.

The patent next in order to be noticed is that granted to Augustus Dacre Lacy, of Hull House, Knayton, near Thirsk, Yorkshire; the date of which is Nov. 23rd, 1855; the No. 2,641, and price of specification 2s.

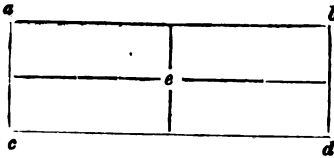
The first claim refers to the construction of the plough. This is constructed of a strong frame of iron carrying two sets of ploughshares, so arranged that one set operates upon the soil in one direction, the other in the opposite. The shares are arranged to cut the ground into furrows in the form of steps, and to throw the soil over as the plough proceeds. Two sets of coulters are also provided to the frame, and so fixed as to give the several vertical cuts to the ground at the depth at which the steps will be formed by the shares following in the previous line of the said coulters. Of the two coulters the first is the largest, and is called by the patentee, the "tell-tale coulters," as it meets with and gives evidence of the existence of any obstacle which may hinder or endanger the onward progress of the ploughs. The ploughs with their attendant coulters are fixed on the under side of a plate, which forms a kind of platform on which the attendant sits. To the ends of the frames wire ropes are attached in such a manner that should the coulters meet with any obstruction which throws a certain amount of strain on the rope, the wire ropes are disconnected from the plough frame, which remains quiescent till the obstacle is removed. When this is effected the wire rope is hauled back to the frame by means of a windlass mounted on it and within reach of the attendant. The ploughs are worked by the following arrangement of steam engines and pulleys:



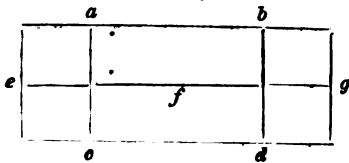
Let *a b c d* be the rectangular field to be ploughed; two engines (*c* and *b*) are placed at opposite ends of the diagonal *c b*. Rails represented by the lines *a c*, *b d* are laid down, and supported on an iron or other framing, and which may be fixed or stationary; *e f* are two pulleys, the position of which on the rails *c a*, *b d* may be changed to suit the various breadths of land under cultivation. Let *g* represent the plough frame, which traverses the distance between the rails *c a*, *b d*. A wire rope proceeds from the drum of the engine *b*, over the pulley *f*, and is attached to the end of the plough frame *g* nearest the pulley *f*. The second wire rope proceeds from the winding drum of the engine *c*, over the pulley *e*, and is attached to the end of the plough frame *g*. When the drum of one engine is winding in, that of the other is uncoiling, each rope being alternately the hauling and the return rope. Where fences or divisions of land occur across the line of the wire rope, and also to allow for the uneven surface of the

ground, the wire rope passes over a revolving pulley or bar fixed in a wire fence in the former case, and in the latter over mounted rollers.

By means of the foregoing arrangement of the plough with the prime mover, the patentee proposes to cultivate the land as follows:



This diagram represents an area of land of 200 acres divided into four rectangular spaces of equal area. By placing engines at the points *a*, *b*, *c*, *d*, and *e*, it will be seen that five engines will be competent to cultivate 200 acres. The next diagram represents the arrangement necessary for 400 acres, in which seven engines



(*a*, *b*, *c*, *d*, *e*, *f*, and *g*) are required, the number of engines required thus decreasing with the increase of extent of land to be cultivated. By the arrangement proposed, the patentee purposes effecting all the outdoor work of the farm—cultivating, manuring, cropping, &c.

The patent next to be noticed is that granted to James Howard, of Bedford, and George William Baker, of Woburn, for improvements in machinery or apparatus applicable to the tilling of land.

In ploughing by steam the patentees propose to use turnwrest ploughs, any convenient number being attached by chains to a travelling frame. This is to be drawn forward by a chain, which, passing round a central guide pulley carried by the frame, is taken over a guide pulley fixed at the opposite corner of, or other parts of a field, and finally wound round the periphery of the winding drum of the steam engine employed as the motive-power.

The travelling frame, by which the pull of the engine is communicated to the plough, is of cast-iron, and supported on four wheels. Instead of being rectangular in form throughout its extent, the front part is contracted, to form a triangular frame, and is supported by two front running wheels, and is further provided with a series of guide rollers (*a*). The hinder part of the framing is carried by two large running wheels. Near the back part of the framing a loose running shaft (*b*) is supported in bearings made on the lower edges of the sides of the framing. This supports a series of four pulleys (*c c c c*), provided with clutch boxes and levers, by which the pulleys (*c c c c*) can be thrown in and out of gear, and allowed to revolve or be kept fast upon the shaft (*b*). In advance of the shaft

(*b*), another shaft (*d*) revolves in bearings fixed to the framing, on the centre of which a double chain pulley (*e*) is keyed. These pulleys receive the taut and slack ends of the draught-chain connected to the windlass barrels of the engine. At the opposite ends of this second shaft (*d*) clutch boxes (*f g*) are fixed: these clutches take into stops on the inner sides of the framing, so that when the clutches are thrown into the stops the shaft (*d*) is kept from revolving. The clutch-box (*f*) to the left hand of the shaft carries a toothed wheel (*h*), which engages with an intermediate wheel (*i*) running in and supported by a stud bolted on to the side of the framing. This intermediate wheel (*i*) engages with a third toothed wheel (*k*), which is keyed on the shaft (*b*) at the back of the frame. The clutch box (*g*) at the right hand of the shaft (*d*) carries a toothed wheel (*l*) which engages with a toothed wheel (*m*) keyed on the end of the shaft (*b*). This arrangement admits of the shaft (*d*) which carries the double-chain pulley (*e*) driving the shaft (*b*) which carries the four pulleys (*c c c c*) always in the same direction, whether the shaft *d* be revolving to the right or to the left hand. The shaft (*b*) at the back of the framing is used only as a draught bar, until the framing, with its attendant ploughs, has traversed the length of land to be ploughed, it being held fast during the traverse by the gearing wheels (*h i k l m*). On the draught framing reaching the end of its traverse, the shaft *d* is allowed to revolve loosely with its double pulley (*e*), by the clutches being thrown out of gear; this revolution of the shaft *d* being caused by the drag of the taut chain which passes over one side of the double pulley *e* keyed on the shaft *d*. The shaft *d* being thus set in motion by means of the toothed gearing (*h i k l m*), it imparts motion to the shaft *b*, with its four pulleys (*c c c c*). As the clutches of these pulleys are thrown into gear, each pulley begins to revolve and wind round on its periphery the chain with which the plough is connected to the framing, as the ploughs come severally up to line the clutch boxes of their respective pulleys, are thrown out of gear, either by the hand or the plough chain striking a projecting stud fixed to the lever of the clutch. When all have come up to line, the travelling frame is turned round, to repeat the ploughing in the opposite direction. The fore wheels of the frame are supported by a swivel frame connected thereto by a swivel pin; to the swivel frame a strong lever is provided, which extends backwards within easy reach of the attendant. This lever not only serves to guide the frame as it is progressing over the field, but enables it to be turned easily at the end of the furrow, the continued drag of the hauling chain greatly aiding the action of the lever. The taut end of the hauling chain passes over guide pulleys (*a*) which retain it in a central position.

The friction pulleys which the patentees propose to use, to receive and guide the hauling chain at distant parts of the field, are provided with spherical bosses, which fit to corresponding spherical projections on the axles. The spherical boss is made in two halves, to embrace the spherical projection on the axle, and bolted

to the pulley. A hook on the strap which carries the axle of the pulley permits of the pulley being held fast by the anchor. By this arrangement of pulley a slight oscillating movement is allowed it, so as to give it a certain amount of self-adjustment to suit the direction of the strain.

The second part of the patent refers to the improved construction of the turn-wrest ploughs employed, which improvements are applicable where animal draught is employed, as well as where steam power is the hauling agency.

The last patent invention which at this time we have to notice is that granted to Thomas Keddy, of Handforth, in the county of Stafford, dated 18th August 1857, No. 2194, price 9d. The apparatus is of the same class of steam cultivating mechanism of which Usher's steam plough forms an example; the steam-engine which works the cultivating implement progressing over the land. The mechanism consists of three essential parts:—First, the guiding machinery by which the motion of the whole apparatus is directed. Second, a carriage moving on two heavy rollers; these rollers not being cylindrical in their periphery, but formed of prisms of ten, twelve, or other number of sides. The rollers are geared together, and an endless jointed band of metal passes over them. Within the band a series of small cylindrical rollers causes the lower portion to bear in its whole length on the land, similar small rollers supporting the upper part of the band. The third part of the mechanism is of two parts: first, a series of screws, resembling auger points—six in number; these are placed vertically in front of the

machine, and have motion given to them by means of bevil gearing from a horizontal shaft above the line of screws; the depth to which the screws penetrate the land is regulated by guide rollers, which can be set to give any required depth. The second part of the third division of the mechanism consists of a series of prongs fixed to a plate to which an oscillating movement is given. Beneath the moveable plate a fixed plate is provided, with a series of holes through which the prongs of the moveable plate pass. An up-and-down motion is given to the moveable plate by means of a crank, the result of which is, that the prongs are drawn up from time to time through the holes of the fixed plate, and cleaned from all extraneous matter. The prongs above alluded to are straight, in order to allow them to move in the holes of the fixed plate; but they are followed by a series of curved prongs, the office of which is to collect all switch or other matter from the land.

One-half of the rotary screws or tillers rotate in a different direction from the other: coulters precede or are placed between the tillers. The frame which carries the tillers is capable of being raised or lowered, in order to regulate the depth to which they penetrate the land.

When being transported from place to place, the mechanism is not borne by the rollers previously described, but by a pair of wheels, the axle of which is connected with the carriage by hydraulic rams or pumps. By forcing water into these rams, the carriage is raised, and the weight taken off the rollers and thrown upon the wheels.

VEGETABLE OILS AND FATS.

There is a slight difference of practice in this country from that which prevails in many others. Here our farmers and graziers use their best endeavours to convert vegetable substances into animal fat; abroad they are content to grow and produce vegetable oils and solid butters—which are obtained in abundance, independent of animal assimilation. In Great Britain we must fain look to our oxen and sheep for the indigenous tallow and fat; for we have no genial or tropical climate to ripen the various fruits, nuts, and seeds, &c., which yield oils and fats in such abundance elsewhere. Fortunately, however, commerce comes in, to supply the existing and increasing demands of our manufacturers for soap, candles, lubrication, food, &c. And great as is the consumption for various purposes, the imports of old and new substances keep pace therewith. Even tallow, of which we require so large a foreign supply, though it seems decreasing from Australia and South America, is on the increase from Northern Europe, and last year's imports were even some 25,000 cwt. above those of either of the two preceding years. The products of the whale fishery—train-oil, blubber, and spermaceti, for which we are now chiefly dependent

upon the American whalers—still reach us in pretty steady supply, our imports averaging for the last three years 20,000 tons.

The imports of palm-oil and cocoanut-oil last year were below those of the preceding year, and the price keeps up. Olive-oil came in in larger quantities, the imports being between 6,000 and 7,000 tons in excess; and there were about 4,000 tons of seed-oil received less than in 1857.

There is scarcely, however, a limit to the supply of vegetable oils and fats obtainable from different localities, upon fair notice and a reasonable price. From India, besides the innumerable small oilseeds adapted for crushing, which can be raised in abundance, there are the *Bassia* butters, or Mohwa oil and cocum butter—cocoanut-oil—which comes forward in such large quantities from Ceylon and Cochin. In the island of Ceylon there are now 2,500 acres under culture with the cocoanut palm.

From the far East we receive the insect-tree wax of China, the Borneo vegetable tallow pressed from the cotyledons of an undescribed tree, and the Japan vegetable wax now coming forward in such large quantities from

the ports of that empire, with which we have recently opened up trade relations. This Japan wax is likely to prove a very important staple of commerce, from its whiteness, hardness, and the quantity that can be obtained of it. It is procured from the small fruit or seeds of a species of sumach, which is extensively cultivated in plantations by the Japanese. Two or three vessels, with several hundred tons each on board, have already arrived here and in Holland direct from Japan; and now that an increased number of ports in Japan are opened to us under the terms of the recent treaty, larger supplies may be expected to come forward.

It is curious to note the variety of sources of vegetable oil, whether from the tiny rape or flax seed, the various nuts and oily fruits, or the copperah or dried pulp of the cocoanut. The ground-nut or underground seeds of a leguminous plant yield to commerce a large quantity of oil in Africa and America. In China the seed of a species of camellia is used to extract oil from, which is known as tea seed oil. The hitherto wasted seeds of the cotton plant extracted from the wool are now decorticated and pressed, and this is converted by bleaching into a very useful oil. Another instance of the utilization of a formerly waste substance for the purpose of oil is the kernel of the fruit of the oil palm. Formerly this was usually thrown away, the palm oil of commerce being obtained only from the sarcocarp or pulp of the fruit surrounding the nut. About 50,000 tons of palm oil are annually shipped from Western Africa, and the kernel of these ought to yield about 75,000 tons of oil, or one-half

more than the quantity obtained from boiling the fruit at present, making a difference of £3,000,000 to £3,000,000 in the extent of the trade.

Oil is obtained from the berries of several species of *Myrica*, known as the candle-berry myrtle, from the use to which the solid oil is applied.

In Nassau and Switzerland, as well as in Cashmere, walnut-oil is much used, and is no bad substitute for olive oil in preparing salad. The industrious and exceedingly economical German housewives know how to render rape oil fit for the purposes of an artisan's kitchen by the simple process of boiling a quantity of it in a frying-pan with a piece of bread and an onion.

One of the most recent and extensive sources opened up to the manufacturer is the preparation of oil from peat and petroleum, or mineral oil. The beautiful candles, superior to wax, now obtained from the paraffine and Belmontine, are instances of the scientific application of chemistry to trade purposes resulting in the conversion of these waste products to very important uses. The production and trade in oils and fats, animal and vegetable, forms one of the most important branches of commerce; and so urgent and growing are the demands for various economic uses, that new supplies are eagerly sought for in every quarter. The aggregate value of the oils and fats imported is about nine millions sterling; to which has to be added our home production, obtained from the tallow-melters, the butchers, the kitchen refuse, the bone-boilers, the oil-crushers, and other sources.

FECUNDITY OF GRAIN.

The fecundity of grain, whether wheat, barley, or oats, when nature's laws during its growth are strictly observed and left uninterrupted, appear to be beyond belief for want of experimental knowledge, and not unfrequently are faithful descriptions of specimen roots grown and produced from single grains 100 to 1,000 and 4,000 fold (whilst average productions are not 20 where planted in clusters, and which is a general rule), pronounced as downright falsehoods, absurdities, and impossibilities, though ocular demonstration and statistical calculations and statements bear witness to the truth of it. Such specimens, say they, are not produced from single grains, but from two, three, or more, planted close together, and by a scheme of the cultivator, ingeniously contrived to entwine the roots and shoots, so as to appear only the production of one grain.

Sceptics, however, may rest assured that such palming upon the public mind is not the case, and is foreign to our wishes; moreover it cannot possibly be so, inasmuch as the laws of nature defy it, and we challenge anybody to gain as much produce from two, or any number more grains planted close together, as we ourselves or they themselves can grow from one planted singly. Our own frequent experience has proved (and to remove arrogance, common sense will convince any one), that neither two nor twenty grains planted in one small hole will yield so much as one planted by itself, no more than as many apple-trees, turnips, mangold wurtzels, potatoes, or any thing else will produce as much measure or weight as

if they had been planted separately: with this proviso, however, that due time and space be allowed and allotted for each plant to perform its natural capabilities. August and September is the time directed by nature for planting wheat, when it will shed or sow itself, nicely separating and distributing it, when wafted by the wind, each grain in an isolated manner, as if an All-wise Providence had intended it for the imitation of man. Accordingly this is the time we have adopted for sowing wheat, and October the best season for sowing barley and oats, in order to produce extraordinary results; hence the idea and utility of sowing grain singly, uniformly, and early, whatever quantity we or any other people may think proper to plant on any given space of land. Incredulous interested persons will do well to experience for themselves (for we do not desire to be arrogant in the matter) the truth of all such statements bearing on this point, by planting single grains, strictly adhering to proper time and space as here directed, in order to obtain satisfactory results, not placing dependence so much on ground highly manured for the purpose (this may prove fallacious), as land thoroughly cultivated in the true sense of the word, and kept free from weeds. Surface solidity also, after such thorough deep stirring of the soil, will prove of more avail than continual loosening it around the plants during their summer growth, which causes them to tiller unseasonably. Our own specimens for competition in 1860 are already planted and germinated, and to give fair play to nature, we have chosen some of our poorest land, which has not been

stirred for a twelvemonth, and has not had a particle of manure for four years, since we have had it, nor we know not how long before.

It is an old saying and a true one, "solid ground for wheat;" true; but it should be explained, "*surface* solidity," after perfect cultivation of the soil *below*, and not a rock-like underpan, trodden by horses for ages past, which prevents an essential point—the absorption and percolation or filtration of the rains, and which causes so much fuss about draining now-a-days. But the *steam plough* will no doubt eventually, and we hope speedily, set this argument at rest, and effect wonders in agricultural science never before achieved. Since our friend Bentall's "*broadshare*" has been brought into general use great wonders have already been performed by it, in extricating weeds on etches in summer, preparatory for deep ploughing in autumn, in such a complete style as ordinary implements and manual labour could never have accomplished; but with all due deference to our neighbour Bentall's broadshare, which may be faithfully declared an invention *pro bono publico*, Mr. Fowler's *steam machine* being on the advance, may reasonably be expected ere long to supersede it, and every art and contrivance which human thought and ingenuity ever suggested to effect the *perfect* cultivation of the soil, and will no doubt ultimately annihilate all land cultivation by the present

plans. All hail, then, to mighty steam! and to the all-powerful steam-engine! the master-piece of human skill! the most valuable present that philosophy has yet given to the arts of man! Approaching to the nature of an animal of leviathan power, incapable of pain or lassitude, yet it can be put into the most rapid motion, even by the delicate finger of a child! The noblest and most obedient and willing drudge that ever was employed for the benefit of man! With it we subdue nature, nearly annihilate space and time; procure for us coals to warm our dwellings, cook our food, cultivate our fields, thrash, dress, and grind our corn, and even make our bread! Thus we "put a hook in the nose of the leviathan, play with him as with a child, and take him as a servant for ever!" We feel our hearts expand with gratitude to the all-merciful and supreme Being for permitting us to live and see this, the noblest and most valuable of human inventions, enter our fields, by which in a very few years also, it will cheapen all the necessities of life, and secure the contentment, comfort, and happiness, we hope, of all our fellow-men, by enabling the earth to supply them with an abundance of cheap, wholesome, and nutritious food as well as clothing. "All hail," then, we repeat, to all-powerful steam!!

HARDY & SON,

Seedgrowers, Maldon, Essex.

THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

MEETING AT EDINBURGH.

XXX

Within a comparatively recent period the three National Institutions of Agriculture have all been in a state of considerable disturbance. This is the more noticeable, as the two elder at any rate had long preserved the even tenor of their way. So thoroughly established, indeed, had the direction of either gradually become—so strictly in accordance with good precedent was every thing they did—that he must have been a bold man who would venture to suggest alteration or improvement. In truth, such interference was never very gracefully received, and consequently for a time but rarely offered. An opening, however, has occurred almost simultaneously both in England and Scotland; and, undoubtedly, in either instance the most has been made of it. We need not dwell here on the contemplated changes in Hanover-square, but we may say a word on the effect of the late stormy weather in the North. It certainly appears to have done no harm. On the contrary, many leading men of the Highland Society personally assured us these discussions would eventually tend to much good, and give the great body of members a far stronger interest in the proceedings than they had for a time been suffered to enjoy. Something of this is already perceptible. The conduct of the Edinburgh show was far calmer than that which has distinguished many of the previous anniversaries. The observance of rule and order was maintained without any very emphatic display of authority; and yet never, perhaps, has such an occasion passed off so well, or with so much general satisfaction.

There is no denying that this Edinburgh Meeting was

regarded as something of a crisis in the career of the Society. Had anything gone wrong, had anything ungracious or offensive occurred, there is still an undercurrent of opposition quite ready to make the most of such arguments. But we must repeat that everybody was on his best behaviour, and that the business of the week, so far as we could watch it, was not marred by a single mischance or dispute. A certain desire, moreover, to march with the spirit of the times is now clearly observable. For the first time the public had two days allowed them to inspect the stock, and for the first time, too, were the cattle covered in. It is very fortunate that they were, as the weather was by no means settled, and some heavy rain fell on the Wednesday afternoon. But the Society has to go a step further in this direction, and give the implements the same protection. We were loath at first to offer any very strong opinion as to the arrangement of this department of the Meeting, but the experience of year by year only the more confirms our English notions as to its few advantages and many drawbacks. The rain itself was, perhaps, the most severe commentary on such a system. Only picture prize machines of all descriptions scattered over some acres of ground, without an atom of covering either for the exhibitor or his wares, and a heavy storm coming on! Let the several entries of each section be placed side by side, if you please, for the inspection of the judges, but then allow the makers subsequently to collect them in their own stands. The present plan positively spoils trade, and, as we said last year, "it would be quite as much

for the good of Scotland to buy as for England to sell." Many of the manufacturers would gladly pay for the accommodation, which it must be borne in mind the Highland Society now alone refuses them. The English firms, more especially, are gradually culminating in their expression of dissatisfaction on this point, and the Scotch farmers are at length beginning to thoroughly appreciate English machinery. Never previously was the admission so openly made, as never before, perhaps, was the superiority so thoroughly demonstrated. About the most striking example of this was the trials of the ploughs on the Tuesday, in the presence of such a crowd of landlords and tenants as one rarely or ever sees so early in the proceedings. There were a great number of pair-horse ploughs put to work, chiefly of course of the Scotch swing make, but fortunately with one or two of our wheel-ploughs by way of comparison. Better still, these went bodily into competition. The Messrs. Howard, of Bedford, who last year at Aberdeen held off so determinedly, now entered openly for the premium, and won it as fairly. The most clannish of Scotchmen confessed there was no work like it. The noble President of the Society was delighted, and local men hang round the performance to gather hints and wrinkles for their own advancement. Mr. Sellars was, to the credit of the country, a good second, and Page of Bedford, although we believe not mentioned by the judges, as honest a third. Still the interest centred on the other English plough, and the only complaint was that the Hornbys, who were present, had not also gone to trial. It was clearly against them, in the estimation of the public, that they did not. But the non-prize system is susceptible of endless ramifications and interpretations, and in endeavouring to observe them only too religiously the Grantham house placed itself in a somewhat false position. It is curious to see how they came to do so. There is, then, in London an institution, of the proceedings, of which, although little is heard, yet that still exercises considerable influence in its way. It is, we think, termed the Society of Agricultural Engineers, having for one of its chief objects the abolition of the prize system. In the prosecution of such a laudable endeavour, when it was found a few months since that the Highland Society would not give way, but still continued to offer premiums for implements, a majority of the agricultural engineers came to this resolve—They would not exhibit at all at Edinburgh, and we are assured a paper to this effect was signed by Clayton and Shuttleworth, the Howards, the Garretts, the Ransomes, and others. The Hornbys alone, however, would not promise thus much, and so the proposal fell in, and those who chose were at liberty to enter for the Scotch meeting. Clayton and Shuttleworth and the Hornbys appear to have done so, under the idea that as at Aberdeen they were bound not to compete. Mr. Howard, on the other hand, sees the absurdity of attempting to persevere in so impractical a course, and so far as he is concerned the non-prize plan is at an end. But his opponents and fellow-engineers maintain that they have not been fairly dealt with, and that had they known he was going to com-

pete they should have arranged to do so, too. As it was, the Hornbys did put a plough to work early on Wednesday morning, for which they were severely reprimanded. But we scarcely see the force of this. Were not ploughs permitted to go to work at Aberdeen, "not for competition," but to show their character in comparison with the prize-takers? And the Hornbys did no more. However, this dispute is a very suggestive one, and lays bare the secret and purpose of the whole agitation—when once you get to the top of the tree be content to stop there. People said Hornby was afraid to endanger his Warwick triumph at Edinburgh. And others asked if Howard had been first and first in England whether he would have competed in Scotland? In speaking of this year's experiment of no prizes in Ireland, as tried the other day at Dundalk, *The Irish Farmer's Gazette* says, "The absence of trials or competition for prizes has in some degree lessened the interest taken in these shows, and will no doubt act injuriously on the funds of the Society, and, if we mistake not, also on the exhibitors." It certainly so acted at Edinburgh. Mr. Howard, who did compete, was in general favour; and Mr. Hornby, who did not, in almost as much disgrace. The Society of Agricultural Engineers are singing terribly out of tune with each other; and we should really counsel them, as the parish-clerk did his choir under similar circumstances, to "*drap it*." We must be understood as by no means divulging any private or confidential intelligence. All we have recorded was the common talk of "the trade;" while even telegrams were running up and down during the Tuesday, as to what the Society of Agricultural Engineers should or should not do.

We have considered it only a duty to make some special reference to this matter, obviously important as it is to the managers of our agricultural associations, as well as to the whole body of our implement-makers. The one great deduction is inevitable. As Lord Brougham said the other day, "Man's lot is to compete with his fellows;" and the more openly he does so, the better. We counsel our different societies, ere they commit themselves to the non-prize system. We put it to the great body of manufacturers whether they should follow "the Society," the very generals of which cannot agree with each other? There is a fine opening now just dawning for the introduction of good implements into Scotland; but we fearlessly assert that this can never be made the most of, without the incentive of public competition. Let us remember how the people crowded round these trials, and how ready they were to conviction thus put honestly before them. And let us compare with this the listless way in which they looked at entries that carefully avoided such a test. When the agricultural engineers signed their "round robin" not to exhibit at Edinburgh, because premiums were offered, they were doing both themselves and the agriculturists of Scotland as much harm as it is possible to conceive. As a correspondent devotes a paper specially to the implement section of the show, we may now turn to some of its equally attractive features.

A Scotch show of stock is essentially national, and the Edinburgh meeting perhaps of all others was peculiarly distinguished in this wise. It was in the native breeds that its great strength was to be found. It was the Highland and Ayrshire cattle, the Cheviot and blackfaced sheep, and the Clydesdale horses that showed to the greatest advantage. We use the term advisedly. No other kinds were anything like so much at home here. The very Shorthorns, now at home almost everywhere, certainly suffered as a class against the rough-coated but blooming-looking mountaineers. The Leicesters and Southdowns had rarely the healthy vigorous appearance of the long bang-tailed Cheviots, or the resolute curly-horned denizen of "the hill." In a word, there is no other quarter of the kingdom in which climate has so much to do with it; and although they may be improved, it is rarely that the original breeds can be displaced. In the lowlands, and where the country will pay for high farming, some change may be observable; but elsewhere, almost every district adheres to its own sorts as faithfully as to the pedigree of its clan or the pattern of its plaid. Even the most advanced of agriculturists have discarded the fine Leicesters we saw them buying at Berwick a few years since, and have gone right back to their own sorts. And a Scotch Leicester is rather a different animal from our English one, as Mr. Wiley gave us the opportunity of remarking at this very meeting. Amongst the horses, here so comparatively close to the banks of the Clyde, there was no such chance of a comparison. Saving only a good-looking thorough-bred horse, or a curiously small Shetland pony, there was scarcely anything to interfere with the one long line of Clydesdale stallions, Clydesdale mares, and Clydesdale colts and fillies. Still, like the horned sheep or the Highland cattle, the Clyde horse is clearly susceptible to improvement, or, in other words, to the influence of these meetings. A Clydesdale prize mare is now a very different animal from that the members of the Highland Society hung up in their Museum Hall in 1840, with her long legs, weak thighs, hollow back, and light middle-piece. Either the painter or his patrons must have been put to it for a subject in those days.

The great show of horses, however, was not on the show ground; or, at least, it was not here that the stranger gathered his impressions of the real use and value of the Clydesdales. They may be pampered up for mere exhibition, and are certainly as a rule made very fat. But at Myreside Farm, where the implements were on trial, there were some fifty sets of working pairs, ready to take out the ploughs, harrows, grubbers, and mowers. These, as usual, were borrowed for the day from the neighbouring tenantry; and never were such a lot of plough-horses got together. It was, in fact, the Clyde horse shown to the greatest advantage—in excellent condition, very uniform in character, generally of great size and power, they fairly for a time monopolised the whole interest of the scene. People could scarcely be got to look at the work, but were going about trying to pick out the best couples—by no means an easy matter. It was not, indeed, until the ploughs started, and horses and implements were nearly all matched, that the visitor remembered what he had specially come to see. There was not only the make, shape, and action of the Clydesdale as a cart-horse that commanded so much admiration, but equally so the manner in which they were kept. They were as fresh and as lively as kittens, although still, we were assured, only in common working order. But the Scotch farmers evidently pride themselves on this point, and a ploughman and his pair will cost on an average quite a hundred a-year. Some were consequently anxious enough to have another look at the steam plough,

but strange to say there was not one in the entry. For some altogether inexplicable cause the Society declined this year to give any prize for such an invention. The Messrs. Howard, however, offered to send a set of Smith's apparatus providing a field could be found to work it in. But even this could not be promised, and so the meeting was minus what should have been one of its chief features.

The Clyde horses in the catalogue quite maintained the reputation of those we had seen the day previous. It was pronounced to be one of the best entries of them ever seen; but was certainly not for stallions equal to the Glasgow show of two years since. The first prize aged stallion, a grey horse, was the subject of a deal of discussion, and it is rather difficult to understand how he came to be ranked so highly. Standing by his side, he is by no means a true-made animal to begin with, being but indifferent before, and with little of the acknowledged character of the Clyde about him. He loses this yet more when had out; for he is a wretched heavy, slovenly goer. Still it was said that he gets capital stock; but this must be a curious point to judge a horse in the show by, where men are assumed to know nothing of an animal but what they see before them. The second prize, a bay horse, queerly marked with the black leg, running right over the hock and up to the stifle, was generally, and as we think justly, preferred. He is smarter to look on, more compactly built, and altogether a better horse out. But the strength of this section was found in the mares with foals, and mares in-foal. We never recollect such a succession of good animals, and generally so much alike as to answer at once for the care with which the breed is now preserved. As a rule the Clydesdales show far better at five or six years old than they do as young stock, and some of the yearlings on the Links looked very mean and poor when put in comparison with their elder brethren. It is, indeed, difficult to imagine that they could ever develop into the fine horses they do; but it appears they are kept very indifferently until a year or eighteen months old, and then gradually "put on." The entry included many well-known prize animals at Aberdeen, Perth, and elsewhere; but, the catalogue was lamentably incomplete in this respect, and did not give the name or pedigree of a single horse. It may be much improved by being modelled henceforth after our English one, not merely as regards the horses, but also in the entries of other kinds of stock. For instance, we cannot possibly understand why the pedigrees and names of the short-horns should not be given with the number of the animal, instead of being all huddled together right at the end of the book, where not one man in a thousand ever sees them or reads them.

Notwithstanding that this addenda advised us of some very high-bred animals, the show of Shorthorns was not a great one. In truth, had it not been for Mr. Douglas' entries, the cow and heifer classes would have been woefully weak. But the master of Athelstaneford came very welcome to the rescue, and with more determined success than has yet attended him this summer. The beautiful Venus, the renowned Ringlet, the Lady, and her attendant companion the Maid of Athelstaneford, were our fellow-voyagers from Belfast to Glasgow; and we found them all in high health and honour again, adding by their own innate attractions to the picturesque show ground at Edinburgh. It will be seen that Mr. Douglas took the first and third premiums for cows, and the first and second for two-year-old heifers. The latter—the Lady and the Maid of Athelstaneford—have, like the Queen of Trumps and Venus last year, their two parties; and while the Maid was preferred at Dundalk, the Lady had the lead in Scotland. They are a most admirable pair, and it

is difficult to separate them; but although the Maid may have a little the best of it for quality, the Lady has by far the finer head and fore-quarter; and, for choice, we lean to the second reading. The cow Volga, that separated Mr. Douglas' two, also beat Rose of Sharon in Ireland; and has so been first at the Irish, second at the Scotch, and third at the English meeting. She was bred by Mr. Stewart, of Southwick; and is not only very useful looking, but very well bred, going back to the famous Cherry tribes. Mr. Stewart, however, could not get her to breed, and she was sold as a butcher's beast. But she has since been frequently exhibited, as well as objected to as not being a breeding animal; although now at eight years old, she has a calf by her side. The first prize yearling heifer from the Messrs. Turnbull's herd, is very sweet and neat looking, and the Duke of Montrose's second and third are both well bred and well made. But "the field" behind those placed was terribly scattered. The bulls were generally better, and the first prize one, bred by Mr. Bolden, goes back to the Duchesses; although, like many of the Bates breed of bulls, he is nothing so very extraordinary to look at. He was the first prize two-year-old at Aberdeen, and Mr. Gulland's was there third in the same class, so that they still keep their relative positions, but there is now very little to choose between them. The third was the third aged bull at Aberdeen, and the first at Dundalk last week, and perhaps for appearance, size, and symmetry he was here, too, the first of his order. It must have been "the quality" that beat him. The two-year-olds were a good but small class, and the yearlings not of such equal excellence. In this lot Lord Kinnaid had the best for shape and symmetry, and Mr. Smith for touch and pedigree. The latter, indeed, is very highly connected, being by a son of Booth's Crown Prince, and bred by his Royal Highness the Prince Consort. His quality is certainly very fine, but he is "just" a ragged animal to look on.

We have already spoken to the remarkable excellence of the native breeds, and we may dwell more especially on the Highlanders and Ayrshires. In our many visits to the North we have never seen such a show of the former. Indeed, we began to think they were growing out of date of late. But they quite recovered themselves at this meeting. There was more size, as usual rare constitution, good forms, and that hardy picturesque appearance that would, above all things, go to qualify them for those regions from which they take their title. The bulls were very grand, the cows more useful; but if we were to select a class, it would be the three-year-old heifers. If we were to go yet farther, and name three animals as perfect specimens of their kind, they would be Mr. Douglas' shorthorn heifer Venus de Medicis, Mr. Drew's milking Ayrshire cow, and Mr. Campbell's three-year-old Highland heifer. The last named of these is certainly the finest-looking Highlander we ever encountered. There never was such a head, so grand, of such wild beauty, with the wide-spreading horn, and singularly expressive eye. If Rosa Bonheur wants a fitting model for her easel, she must go to Jura. But Mr. Campbell's heifer does not "go on her head" merely. She is famously fleshed, has a capital coat, and is not only handsome, but useful. She was well supported throughout; and although we cannot see that this should be just the district for them, the Highlanders have never mustered before in such force.

Almost as much might be said for the Ayrshires, which were more particularly distinguished by the presence of two animals—the first prize bull and the first prize cow—along way the best of a very good entry. The cow is the sweetest-looking, cleanest,

prettiest-marked milker that even the lads and lasses of Ayr ever had amongst them. In a little higher condition, and with her back-bone not quite so prominent, she would have been a perfect picture. There were others far better covered, but none had her fine appearance or graceful beauty. Her owner, Mr. Drew, had a coarser cow, also the first in her class, which has occasionally had the preference of the favourite here; but for her especial purpose—the dairy—there was nothing to compare with the milking cow. The black polled cattle were not very numerous, but there were some well-known animals amongst them. The Angus cows were especially good, Mr. Collie's first having been second at the great show at Aberdeen last year. The cross-breeds were chiefly noticeable for the presence of Shorthorn blood in them. Almost all of them had some of it, while in many this was so strong that they might have been pardonably taken for pure-bred beasts. In fact, they frequently were, and many a visitor, without going to the trouble of consulting his catalogue, put them down as "just another lot of Shorthorns."

In the sheep as with the cattle the Scotch kinds were very superior. In truth, neither the Leicesters nor the Southdowns showed to much advantage. The former had no uniformity of character, and English and Scotch judges would have differed materially in settling the awards. The Scotch Leicester is, indeed, of quite another sort of sheep, and occasionally, we should say, anything but a pure one. The Southdowns were completely overridden by the presence of the prize sheep from Warwick. The Society was particularly anxious that the Duke of Richmond should make some entries, and his Grace was kind enough to do so. He sent not only some from his flock at Gordon Castle, but others from Goodwood. Those from Sussex included the famous first-prize Royal shearing, the first-prize old ram, and the first-prize shearing ewes, and the comparison was almost too cruel. Even the duke's own Scotch sheep suffered materially, and nothing of course had a chance with the grand, handsome animals that made so great a sensation at Warwick. It is remarkable that the Sussex shearing ram is a twin, and, although both were reared, the brother has never yet been exhibited, but has been kept at home less for ornament than use. These sheep, it appears, do not go back to the Babraham cross, but, as the shepherd phrases it, "are bred all away from Mr. Webb." The other long-wools, that is to say Cotswolds, are in the hands of the Duchess of Gordon, Lord Kinnaid, and Mr. Skirving; but Mr. Handy helped them out with a few sheep sent direct from their native hills.

The small show of pigs was also greatly "assisted" by exhibitors from over the Border. Mr. Harrison sent his prize Warwick boar, and the prize again here. Mr. Mangles entered a couple of his white sows, that have each in turn been winners at the Yorkshire meetings, and that, with a boar, and a pen of three young pigs, were all more or less successful now. Then Mr. Robinson had an extraordinary sow, that for size and breeding was quite the marvel of the meeting. She is within a month of pigging, and in her present high condition would threaten to have a hard time of it. But she was not the only sow exhibited in this state—that is as really breeding. Mr. Skinner, of Aberdeen, showed a pen of three sows, declared to be but seven months and-a-half old, one of which is now very near pigging. This is early maturity with a vengeance, and her owner was repeatedly complimented upon so extraordinary an achievement. The general company appeared to take great interest in this section, and Mr. Mangles' Bendigo breed were in considerable request, all he had for sale being readily disposed of at long prices. But they are really a very pretty useful pig. There was also a Butter

show, as well as one of Poultry, but the entries for either were not large.

The Show did not even end here. If the Prince Consort disappointed the Society at Aberdeen, his son the Prince of Wales made up for this by his appearance at Edinburgh. His Royal Highness visited the Show ground on both Wednesday and Thursday, sitting very square and well on his horse, and riding the lines through with much apparent interest and attention. On the first day he was really allowed to look about him; stopped his horse at some of the exhibitors' stands, and saw what there was to be seen. But on the Thursday the crowd fairly hunted him, or rather unfairly—for they headed him here, drove him from his point there, mobbed him everywhere—until, had Sir John Warrener's park wall been at all negotiable, the poor young gentleman must have taken it. The Prince, however, stood it well enough for half-an-hour or so, bowed and raised his hat continually, and ended by becoming uncommonly popular with his Northern subjects, as he certainly deserved to be. Although not present, there were rumours of another great man; and Mr. Norton, for his firm of Richmond and Chandler, was honoured with an order for implements from the Emperor of the French. The Scotch nobility were also well represented, and the Dukes of Athole and Buccleuch took, apparently, a very warm interest in the success of the meeting. Unlike the Irish, we do not think that the landlords here can be charged with not supporting the National Agricultural Society of the country.

The opposition, indeed, maintain that Lords and Dukes have a little too much to do with the management of the Society, and that, as a consequence, those of all others most directly interested go to the wall. Undoubtedly the dinner on the Thursday evening would go far to support this. Nothing could have been more injudicious, and, we are sorry to say, nothing more tedious. There were four-and-twenty toasts to begin with. Every one of these was introduced by a preliminary notice from the chair to "fill your glasses," which with one pint of sherry as an allowance, would have needed all the art of the great Wizard of the North himself to accomplish. Then every one of them was honoured with "three times three upstanding," followed by "an appropriate air" from the band. Farther, for two or three hours after dinner none but Lords and Dukes were permitted to speak, until we really began to think we had got by mistake into a Scotch House of Lords. The first ten toasts out of the twenty-four were religiously confined to Dukes, and the Dukes of Athole, Richmond, and Buccleuch equitably divided the speeches amongst themselves. Even down to the next seven—seventeen out of the twenty-four—care was taken to admit no one of less degree than a Right Honourable or a Lord Provost. And then, when half the company had left, and the worn-out reporters had shut up their notebooks in despair, the management jumbled in the Judges, the Competitors, the Tenantry, the Manufacturing Interests, and so forth. Let us take one example of this absurd flunkeyism. None can respect more than we do the Duke of Richmond, and none could have been more rejoiced than we were to see His Grace present. In due course he made one of the best responses of the evening for "The Army," and he subsequently proposed "The Clergy of Scotland." When, however, it came to "The Royal Agricultural Society of England," the Duke was called up, evidently against his will, to reply, with other Members of the Council in the room. And again, when they drank "The Successful Competitors," the Duke was telegraphed to speak—with such a successful exhibitor as Mr. Douglas, a Scotchman who has been successful in every part of

the United Kingdom, without having a word to say for himself. Fortunately the chairman was no orator, or we should have been there till now. The only really practical, straightforward agricultural speech of the evening was that of the croupier, Mr. Hamilton Nesbit—formerly known as Mr. Christopher—who, with his Lincolnshire leanings still strong upon him, stood up manfully for the associated interests of landlord, tenant, and labourer.

PRIZE LIST.

CATTLE.

SHORT-HORNS.

JUDGES.—Anthony Cruickshank, Aberdeen.

Thomas Hunt, Thornington, Northumberland.
John Thompson, Paston, Coldstream.

Bulls calved before 1st January, 1857, the premium of 20 sovs., to George Shepherd, Shethin, Tarves, and silver medal, to S. E. Bolden, Springfield, Lancaster, as breeder of the best bull (Cherry Duke 2nd).

The second, of 10 sovs., to James Gulland, Newton of Wemyss, Kirkcaldy (Garlick).

The third best, the bronze medal, to William Tod, Elphinstone Tower, Tranent (Young Heir-at-Law).

Bulls calved after 1st January, 1857, the premium of 20 sovs., to John Hunter, Dipple, Fochabers (The Duke).

The second, of 10 sovs., to Thomas Rome, The Bauroch, Annan.

The third best, the bronze medal, to Alexander Bethune, Blebo, Cupar-Fife.

Bulls calved after 1st January, 1856, the premium of 10 sovs., to Lord Kinnaird, Rossie Priory, Inchture.

The second, of 5 sovs., to C. Smith and Co., Hillhead, Ardersier (Lord Privy Seal).

The third best, the bronze medal, to G. H. Binning Home, Argaty, Doune (Van Tromp).

Cows of any age, the premium of 15 sovs., to James Douglas, Athelstaneford, Drem (Venus de Medicis).

The second, of 8 sovs., to Wm. Tod, Elphinstone (Volga).

The third best, the bronze medal, to James Douglas, Athelstaneford (Rose of Sharon).

Heifers calved after 1st January, 1857, the premium of 10 sovs., to James Douglas, Athelstaneford (The Lady of Athelstane).

The second, of 5 sovs., to James Douglas, Athelstaneford (The Maid of Athelstane).

The third best, the bronze medal, to the Duke of Montrose, Buchanan, Drymen (New Year's Morn).

Heifers calved after 1st January, 1858, the premium of 8 sovs., to Messrs. Turnbull, Bonhill-place, Dumbarton (Lady of Bonhill).

The second, of 4 sovs., to the Duke of Montrose.

The third best, the bronze medal, to Archibald C. Brodie, Abbey Malna, Haddington (Belle of the Abbey).

BLACK POLED ANGUS OR ABERDEENS.

JUDGES.—Arthur Glennie, Ferniestat, Bervie.

David McCulloch, Auchness, Stranraer.
G. Williamson, Auldton, Turriff.

Bulls calved before 1st January, 1857, the premium of 20 sovs., to the Earl of Southesk, Kinnaird Castle, Brechin, and the silver medal to William M'Combie, Tillyfour, Aberdeen, as breeder of the best bull (Windsor).

The second, of 10 sovs., to the Trustees of the late Robert Scott, Balwyllo, Brechin (President 3rd).

The third best, the bronze medal, to Lord Talbot de Malahide, the Castle, Malahide, Dublin (Lucullus).

Bulls calved after 1st January, 1857, the premium of 20 sovs., to Robert Walker, Montbletton, Banff.

The second, of 10 sovs., to Alexander Bowie, Mains of Kelly, Arbroath.

The third best, the bronze medal, to James Leslie, Thorn, Blairgowrie.

Bulls calved after 1st January, 1858, the premium of 10 sovs., to the Trustees of the late Robert Scott, Balwyllo (Lord Clyde).

The second, of 5 sovs., to George Brown, Westerton, Fochabers (Prince Albert).

The third best, the bronze medal, to Sir James Graham, of Netherby, Bart., Longtown (Hall o' the Wynd).

Cows of any age, the premium of 15 sovs., to John Collie, Ardgay, Forres.

The second, of 8 sovs., to John Collie, Ardgay.

The third best, the bronze medal, to William M'Combie, Tillyfour (Crinoline).

Heifers calved after 1st January, 1857, the premium of 10 sovs., to William M'Combie, Tillyfour (Pride of Aberdeen).

The second, of 5 sovs., to George Brown, Westerton (Rose).
 The third best, the bronze medal, to the Trustees of the late Robert Scott, Balwyllo (Braealeet).
 Heifers calved after 1st January, 1856, the premium of 8 sovs., to the Trustees of the late Robert Scott, Balwyllo (Heiresse).
 The second, of 4 sovs., to Wm. M'Combie, Tillyfour.
 The third best, the bronze medal, to John Collie, Ardgay.

GALLOWAYS.

JUDGES.—Arthur Glennie, Ferniestat, Bervie.
 David M'Culloch, Auchness, Stranraer.
 William Sprout, Borness, Kirkcudbright.

Bulls calved before 1st January, 1857, the premium of 20 sovs., and the silver medal, as breeders of the best bull, to W. and J. Shennan, Balig, Kirkcudbright.
 The second, of 10 sovs., to Sir James Graham, Netherby.
 The third best, the bronze medal, to George Reddick, Greenhillhead, Lochmaben.

Bulls calved after 1st January, 1857, the premium of 20 sovs., to Samuel Thomson, Blasket, Crockeiford, Dumfries.
 The second, of 10 sovs., to Alexander Jardine, Jardine Hall, Lockerby.

The third best, the bronze medal—No entry.
 Bulls calved after 1st January, 1856, the premium of 10 sovs., to John Cunningham, Whitecrair, Kirkpatrick-Durham.
 The second, of 8 sovs., to John Cunningham, Whitecrair.
 The third best, the bronze medal, to James Graham, Melkie Culloch, Dalbeattie.

Cows of any age, the premium of 15 sovs., to John Cruickshank, Cloves, Forres.

The second, of 8 sovs., to John Cunningham, Whitecrair.
 The third best, the bronze medal, to John Cunningham, Whitecrair.

Heifers calved after 1st January, 1857, the premium of 10 sovs., to W. and J. Shennan, Balig.

The second, of 5 sovs., to W. and J. Shennan, of Balig.
 The third best, the bronze medal—No entry.

Heifers calved after 1st January, 1856, the premium of 8 sovs., to Samuel Cunningham, Dunrod Mill, Kirkcudbright.

The second, of 4 sovs., to W. and J. Shennan, Balig.
 The third best, the bronze medal, to W. and J. Shennan, Balig.

AYRSHIRE.

JUDGES.—John Baird, of Lochwood, Coatbridge.
 Andrew McGregor, Dilton, Kilmarnock.
 John Wagh, St. John's Kirk, Biggar.

Bulls calved before 1st January, 1857, the premium of 20 sovs., to Sir James Colquhoun, of Luss, Bart., Rosedhu, Dumbarton, and the silver medal, to James Young, Broadholm, New Kilpatrick, as breeder of the best bull.

The second, of 10 sovs., to John Parker, Nether Broomlands, Irvine.

The third best, the bronze medal, to George Paton, Bankhead, Patrick.

Bulls calved after 1st January, 1857, the premium of 10 sovs., to John Parker, Nether Broomlands.

The second, of 5 sovs., to George Paton, Bankhead.
 The third best, the bronze medal, to Alexander Crighton, Middleton, Dreghorn.

Cows in milk of any age, the premium of 10 sovs., to Laurence Drew, Merryton, Hamilton.

The second, of 5 sovs., to John Marshall, Airbles Farm, Dalzell.

The third best, the bronze medal, to George Pender, Dumbreck, Kilgath.

Cows in calf of any age, the premium of 10 sovs., to Laurence Drew, Merryton.

The second, of 5 sovs., to Robert Kirkwood, High Langmuir, Kilmours.

The third best, the bronze medal, to Alexander Murdoch, Hallside, Cambuslang.

Heifers calved after 1st January, 1857, the premium of 8 sovs., to George Pender, Dumbreck.

The second, of 4 sovs., to George Pender, Dumbreck.

The third best, the bronze medal, to H. D. B. Hyslop, Tower, Kirkconnell.

Heifers calved after 1st January, 1856, the premium of 6 sovs., to John Parker, Nether Broomlands.

The second, of 3 sovs., to George Pender, Dumbreck.

The third best, the bronze medal, to James Robertson, Hall, Beth.

HIGHLAND.

JUDGES.—Robert Anderson, Kildrummie, Nairn.
 John Macfarlane, Faslane, Helensburgh.
 William Webster, Dail, Islay.

Bulls calved before 1st January, 1857, the premium of 20 sovs., to Allan Pollok, Broom, Mearns, and silver medal, as breeder of the best bull.

The second, of 10 sovs., to the Marquis of Breadalbane, Taymouth.

The third best, the bronze medal, to George and John G. Smith, Minmore, Glenlivet.

Bulls calved after 1st January, 1857, the premium of 10 sovs., to R. D. Campbell, Jura.

The second, of 5 sovs., to Allan Pollok, Broom.

The third best, the bronze medal, to R. D. Campbell, Jura.
 Cows of any age, the premium of 10 sovs., to Allan Pollok, Broom.

The second, of 5 sovs., to James, John, and Joseph M'Laren, Mulpersie, Kierriemuir.

The third best, the bronze medal, to the Marquis of Breadalbane.

Heifers calved after 1st January, 1856, the premium of 8 sovs., to R. D. Campbell, Jura.

The second, of 4 sovs., to the Marquis of Breadalbane.

The third best, the bronze medal, to Allan Pollok, Broom.

Heifers calved after 1st January 1857, the premium of 6 sovs., to the Marquis of Breadalbane.

The second, of 3 sovs., to the Marquis of Breadalbane.

The third best, the bronze medal, to the Marquis of Breadalbane.

EXTRA STOCK.

JUDGES.—Robert Hardie, Harriestfield, Kelso.
 George Milne, Haddo, Methlic.
 Thomas Stobie, Balneathill, Kinross.

Cross-bred cows of any age, the gold medal, to David Ainslie, Oosterton, Blisshahels.

The second, the silver medal, to Robert Hunter, Dalhousie, Chesters, Lasswade.

The third best, the bronze medal, to Robert Hunter, Dalhousie, Chesters, Lasswade.

Cross-bred heifers calved after 1st January, 1857, the gold medal, to John Hunter, Dipple, Fochabers.

The second, the silver medal, to James Stewart, New Market, Aberdeen.

The third best, the bronze medal, to James Stewart, New Market.

Cross-bred heifers calved after 1st January, 1856—No entry.

Cross-bred oxen calved after 1st January, 1856, the medium gold medal, to J. and W. Martin, New Market, Aberdeen.

The second, the silver medal, to John Balfour, of Balbirnie, Markinch.

The third best, the bronze medal, to James Stewart, New Market.

Cross-bred oxen calved after 1st January, 1857, the gold medal, to James Stewart, New Market.

The second, the silver medal, to George Brown, Balgarvie, Cupar-Fife.

The third best, the bronze medal, to Robert Husband, Gallat. Polled oxen calved after 1st January, 1856, the gold medal, to William M'Combie, Tillyfour.

The second, the silver medal, to William M'Combie, Tillyfour.

The third best—No entry.

Polled oxen calved after 1st January, 1857, the gold medal, to William M'Combie, Tillyfour.

The second, the silver medal, to William M'Combie, Tillyfour.

The third best—No entry.

Highland oxen calved after 1st January, 1855, the gold medal, to James Stewart, New Market.

The second, the silver medal, to J. and W. Martin, New Market.

The third best, the bronze medal, to Allan Pollok, Broom.

Highland oxen calved after 1st January, 1856, the gold medal, to John Armstrong, Townhead, Dumfries.

The second, the silver medal, to James Stewart, New Market.

The third best, the bronze medal, to Allan Pollok, Broom.

EXTRA CATTLE.

HIGHLY COMMENDED.

James Douglas, Athelstaneford, for short-horn cow (Ringlet).

COMMENDED.

Robert Husband, Gallat, Dumfermline, for cross-bred cow.

John Hay, Oldfield, Thurso, for two cross-bred heifers.

HORSES.

STALLIONS FOR AGRICULTURAL PURPOSES.

JUDGES.—Robert Cosser, Chesterhall, Dunbar.

Thos. Penny.

James Wilkin, Tinwald Downs, Dumfries.

Stallions foaled before 1st January, 1856, the premium of 30 sovs., to Christopher Graham, Inch Farm, Longtown, and the silver medal, to William Baty, Easton, Cumberland, as breeder of the best stallion.

The second, of 15 sovs., to Alexander Sim, Fawells, Keith Hall.

The third best, the bronze medal, to James Lawrie, Mitchellson, Stow.

Entire colts foaled after 1st January, 1856, the premium of 20 sovs., to Peter Crawford, Dumbogack, Strathblane.

The second, of 10 sovs., to David Riddell, Kilbowie, Dun-
tocher.

The third best, the bronze medal, to Peter Wilson, Middle-
field, Lesmahagow.
Entire colts foaled after 1st January, 1857, the premium of
15 sovs., to Andrew Logan, Crossflatt, Kilbarchan.

The second, of 8 sovs., to Samuel Clarke of Menswrae, Kil-
barchan.

The third best, the bronze medal, to Colonel Ferguson,
Raith, M.P., Kirkcaldy.

Entire colts foaled after 1st January, 1858, the premium of
10 sovs., to John Brown, Boghall, Biggar.

The second, of 5 sovs., to Peter Crawford, Dumgoyack, Strath-
blane.

The third best, the bronze medal, to John W. J. Paterson,
Terraona, Langholm.

MARES FOR AGRICULTURAL PURPOSES.

JUDGES.—John Dove, Eccles Newton, Kelso,
Wm. Forrest, of Treesbank, Hamilton,
Alex. Galbraith, Croy Cunningham, Killlearn.

Mares, with foal at foot, foaled before 1st January, 1856, the
premium of 20 sovs., to James Coubrough, Blairtummock,
Campsie.

The second, of 10 sovs., to Robert Morton, Dalmuir, West
Kilpatrick.

The third best, the bronze medal, to Thomas Smith, jun.,
Dalffbble, Dumfries.

Mares in foal, foaled before 1st January, 1856, the premium of
15 sovs., to William Jamieson, Straiton, Liberton.

The second, of 8 sovs., to William Stirling, of Keir, M.P.

The third best, the bronze medal, to Robert Walker, Port-
lethen Mains, Aberdeen.

Fillies foaled after 1st January, 1856, the premium of 10 sovs.,
to James Adam, Muirpark, Stirling.

The second, of 5 sovs., to James Salmon, Benston, Johnstone.

The third best, the bronze medal, to John Kerr, Morton,
Mid-Calder.

Fillies foaled after 1st January, 1857, the premium of 8 sovs.,
to Mathew Gilmour, Town of Inchinnan, Paisley.

The second, of 4 sovs., to William Muir, Hardington Mains,
Biggar.

The third best, the bronze medal, to William Stirling, of
Keir, M.P.

Fillies foaled after 1st January, 1858, the premium of 6 sovs.,
to Wm. Alkenhead, Shaw Moss, Pollockshaws.

The second, of 3 sovs., to Wm. Park, Balquhanan, Dalmuir,
Dumbarton.

The third best, the bronze medal, to John Kerr, Morton,
Mid-Calder.

EXTRA HORSES.—(COMMENDED.)

John M'Adam, Rose-street, Edinburgh (for thorough-bred
stallion, "Lord Falconbergh.")

Robert Dudgeon, Humble, Winchburgh (for half-bred colt).
Robert Brown, Park-place, Edinburgh (for cart-horse in
harness).

Archibald K. Leitch, Inchstelly, Forres (for Shetland pony).

SHEEP.

LEICESTERS.

JUDGES.—Thomas T. Cartwright, Tathwell, Lincoln.

J. C. Langlands, Bewick, Alnwick.

Thomas Scott, Broomhouse, Berwick-on-Tweed.

Tups not more than four shear, the premium of 10 sovs., to
Thomas Cockburn, Sisterpath, Dunse.

The second, of 5 sovs., to Thomas Cockburn, Sisterpath.

The third best, the bronze medal, to Samuel Wiley, Brandaby,
York.

Dinnmont or Shearling Tups, the premium of 10 sovs., to
Thomas Cockburn, Sisterpath.

The second, of 5 sovs., to Thomas Cockburn, Sisterpath.

The third best, the bronze medal, to Samuel Wiley, Brandaby.

Pens of five Ewes not more than four shear, the premium of
8 sovs., to John Collicle, Ardgay.

The second, of 4 sovs., to Thomas Watson, Esperston, Gore-
bridge.

The third best, the bronze medal, to David Wallace, Bal-
grummo, Leven.

Pens of five Shearling Ewes or Gimmers, the premium of
8 sovs., to Samuel Wiley, Brandaby.

The second, of 4 sovs., to Thomas Cockburn, Sisterpath.

The third best, the bronze medal, to the Duke of Richmond,
Gordon Castle, Fochabers.

CHEVIOTS.

JUDGES.—William Aitchison, of Linhope, Hawick,

John Douglas, Norton Hall, Melrose,

John Robson, Byrness, Otterburn, Northumberland.

Tups not more than four shear, the premium of 10 sovs., to
Thomas Elliot, Hindhope, Jedburgh.

The second, of 5 sovs., to Thomas C. Borthwick, Hoparig,
Langholm.

The third best, the bronze medal, to Thomas C. Borthwick,
Hoparig.

Dinnmont or Shearling Tups, the premium of 10 sovs., to
James Johnstone, Capplegill, Moffat.

The second, of 5 sovs., to Robert Turnbull, Fainash, Hawick.

The third best, the bronze medal, to James Johnstone, Cap-
plegill.

Pens of five Ewes not more than four shear, the premium of
8 sovs., to James Brydon, Moodlaw, Langholm.

The second, of 4 sovs., to Thomas Elliot, Hindhope.

The third best, the bronze medal, to Samuel Swan, Bush,
Jedburgh.

Pens of five Shearling Ewes or Gimmers, the premium of
8 sovs., to Thomas Elliot, Hindhope.

The second, of 4 sovs., to Thomas C. Borthwick, Hoparig,
Langholm.

The third best, the bronze medal, to James Brydon, Moodlaw.

BLACKFACED.

JUDGES.—George Howison, Rannagielston, Blairgowrie,
John Macfarlane, Faalane, Helensburgh,
John Lorn Stewart, of Coll, Campbeltown.

Tups not more than four shear, the premium of 10 sovs., to
James Watson, Mitchellhill, Biggar.

The second, of 5 sovs., to Thomas Murray, Eastside, Penicuik.

The third best, the bronze medal, to Walter Murray, Wal-
ston, Penicuik.

Dinnmont or Shearling Tups, the premium of 10 sovs., to Adam
White, Blindewing, Biggar.

The second, of 5 sovs., to Thomas Murray, Eastside.

The third best, the bronze medal, to James Watson, Mit-
chell-hill.

Pens of five Ewes not more than four shear, the premium of
8 sovs., to Allan Pollok, Broom.

The second, of 4 sovs., to John M'Laren, Monzie, Blair
Athole.

The third best, the bronze medal, to W. Turner, Gavinburn,
Old Kilpatrick.

Pens of five Shearling Ewes or Gimmers, the premium of
8 sovs., to Allan Pollok, of Broom.

The second, of 4 sovs., to Thomas Murray, Eastside.

The third best, the bronze medal, to John Wilson, Cross-
house, Roslin.

SOUTHDOWNS.

JUDGES.—George Milne, Haddo, Methlic,
Peter Purves, The Grove, Brampton, Huntingdon,
Hugh Watson, Kellor, Coupar-Angus.

Tups not more than four shear, the premium of 10 sovs., to
the Duke of Richmond, Goodwood, Chichester.

The second, of 5 sovs., to the Duke of Richmond, Gordon
Castle, Fochabers.

The third best, the bronze medal, to James Aitchison, Alder-
ston, Haddington.

Dinnmont or Shearling Tups, the premium of 10 sovs., to the
Duke of Richmond, Goodwood.

The second, of 5 sovs., to James Aitchison, Alderston.

The third best, the bronze medal, to the Duke of Richmond,
Gordon Castle.

Pens of five Ewes not more than four shear, the premium of
8 sovs., to John Hutchison, Monyrug, Peterhead.

The second, of 4 sovs., to John Hutchison, Monyrug.

The third best, the bronze medal, to Robert Scot Skirving,
Campdown, Drem.

Pens of five Shearling Ewes or Gimmers, the premium of
8 sovs., to the Duke of Richmond, Goodwood.

The second, of 4 sovs., to John Hutchison, Monyrug.

The third best, the bronze medal, to the Duke of Richmond,
Gordon Castle.

LONG-WOOLLED SHEEP OTHER THAN LEICESTERS.

(ALL COTSWOLDS.)

JUDGES.—J. C. Langlands, of Bewick, Alnwick,
Thos. Laurie, Terreglestown, Dumfries,
Thomas Scott, Broomhouse, Berwick-on-Tweed.

Tups not more than four shear, the premium of 10 sovs., to
Lord Kinnaird, Rossie Priory.

The second, of 5 sovs., to Edward Handy, Sierford, Chel-
tenham.

The third best, the bronze medal, to Edward Handy, Sierford.

Dinnmont or Shearling Tups, the premium of 10 sovs., to Ed-
ward Handy, Sierford.

The second, of 5 sovs., to Lord Kinnaird, Rossie Priory.

The third best, the bronze medal, to Edward Handy, Sierford.

Pens of five Ewes, not more than four shear, the premium of
8 sovs., to the Duchess of Gordon, Huntly Lodge.

The second, of 4 sovs., to Lord Kinnaird, Rossie Priory.

The third best, the bronze medal, to Robert Scot Skirving,
Campdown.

Pens of five Shearling Ewes or Gimmers, the premium of 8 sovs., to the Duchess of Gordon, Huntly Lodge.
The second, of 4 sovs., to Lord Kinnaird, Rosbie Priory.
The third best, the bronze medal, to Robert Scot Skirling, Camptoun.

PIGS.

JUDGES.—Patrick Brodie, Clarilaw, Melrose,
Christopher Cosens, Hatherop, Fairford, Gloucestershire.

Robert Lyall, jun., Carcarey, Brechin.

Boars of a large breed, the premium of 8 sovs., to John Harrison, jun., Heaton Norris, Stockport.

The second, of 4 sovs., to William Jamieson, Straiten, Liberton.

The third best, the bronze medal, to John Gordon, of Aithenhead, Cathcart.

Boars of a small breed, the premium of 8 sovs., to John Dickson, Sanghton Mains, Edinburgh.

The second, of 4 sovs., to George Mangles, Givendale, Ripon.

The third best, the bronze medal, to John Harrison, jun., Heaton Norris.

Sows of a large breed, the premium of 6 sovs., to George Robinson, Bolton Mills, Alnwick.

The second, of 3 sovs., to John Harrison, jun., Heaton Norris.

The third best, the bronze medal, to John Mackay, Barrhead.

Sows of a small breed, the premium of 6 sovs., to George Mangles, Givendale.

The second, of 3 sovs., to George Mangles, Givendale.

The third best, the bronze medal, to John Mackay, Barrhead.

Pens of three Boar Pigs not exceeding eight months old, the premium of 4 sovs., to George Mangles, Givendale.

The second, of 2 sovs., to Miss Bell, Woodhouselee, Canonbie.

The third best, the bronze medal, to John Harrison, jun., Heaton Norris.

Pens of three Sow Pigs not exceeding eight months old, the premium of 4 sovs., to James Skinner, Woodside, Aberdeen.

The second, of 2 sovs., to Jonathan Brown, Brewery House, Aspatria.

The third best, the bronze medal, to Miss Bell, Woodhouselee, Canonbie.

BUTTER.

JUDGES.—George Murray, Edinburgh,
Francis Richardson, Edinburgh.

Samples of powdered butter.—(No Award.)

Samples of fresh butter, the premium of 5 sovs., to Robert Calder, Millar's Neuk, Kirkintilloch.

The second, of 3 sovs., to Mrs. Smith, Blairmuckhale.

The third best, the bronze medal, to Andrew Macfarlane, Rahmuddy, Blahopbriggs.

IMPLEMENTS.

JUDGES.—Machinery applicable to the working of the soil—

John Lennie, Lander Barnes, Lander,
Robert Russell, Edinburgh,
James Stirling, C.E., Edinburgh.

" Machinery of the barn—

George Bertram, Sciennes, Edinburgh,
George Hope, Fentonbarns, Drem,
Jas. Melvin, Bonnington, Ratho.

" Articles used in the preparation of food for stock, dairy

produce, carts, gates, pipes, &c.—
John Curror, Comiston, Edinburgh,
Hugh Morton, Leith Walk, Edinburgh,
Robert Patterson, Offers Farm, Stirling.

PLOUGHS.

Two-horse ploughs for general purposes, the premium of 3 sovs., to J. and F. Howard, Bedford.

The second best, the bronze medal, to George Sellar and Son, Huntly.

Trench or deep-furrow ploughs, the premium of 3 sovs., to George Sellar and Son, Huntly.

The second best, the bronze medal, to J. and F. Howard, Bedford.

Subsoil ploughs for two horses, the premium of 4 sovs., to James Kirkwood, Tranent.

The second best, the bronze medal, to George Sellar and Son, Huntly.

Subsoil ploughs for three or four horses, the premium of 4 sovs., to Robert Law, Shettleston, Glasgow.

The second best, the bronze medal, to James Kirkwood, Tranent.

Double mould-board ploughs for forming drills, or bulking, with attachment for lifting potatoes, the premium of 3 sovs., to George Ponton, Woolston, Linnithgow.

The second best, the bronze medal, to James Kirkwood, Tranent.

Ribbing ploughs, the premium of 2 sovs., to James Kirkwood, Tranent.

The second best, the bronze medal, to Peter Macgregor and Sons, Keith.

Two-horse grubbers or cultivators, the premium of 4 sovs., to Coleman and Sons, Chelmsford.

The second best, the bronze medal, to James Kirkwood, Tranent.

Norwegian harrows, or other pulverising land rollers, the premium of 4 sovs., to David Young, Hassendean, Kelso.

The second best, the bronze medal, to Alexander Jack and Son, Maybole.

Consolidating land-rollers, the premium of 5 sovs., to Robert Wright, Seton, Preston Pans.

The second best, the bronze medal, to the Trustees of Wm. Crosskill, Beverley.

Land-pressers for preparing seed-bed for grain, the premium of 5 sovs., to Smith Brothers and Co., Kinning-street, Glasgow.

The second best, the bronze medal, to Young, Peddie, and Co., Edinburgh and Glasgow.

Ribbing-machines, the premium of 2 sovs., to Mrs. Thomas Sherriff, Westbarns, Dunbar.

The second best, the bronze medal, to James Kirkwood, Tranent.

Harrows for heavy land, the premium of 3 sovs., to J. and F. Howard, Bedford.

The second best, the bronze medal, to James Kirkwood, Tranent.

Harrows for light land, the premium of 3 sovs., to Edward Page and Co., Bedford.

The second best, the bronze medal, to J. and F. Howard, Bedford.

Harrows for covering grass seeds, the premium of 3 sovs., to J. and F. Howard, Bedford.

The second best, the bronze medal, to Edward Page and Co., Bedford.

Common swing-trees or draught-bars for 2 horses, the premium of 1 sov., to William Gray, Cambusnethan, Wishaw.

The second best, the bronze medal, to George Ponton, Woolston, Linnithgow.

Equalising swing-trees or draught-bars for more than 2 horses, the premium of 2 sovs., to William Gray, Cambusnethan.

The second best, the bronze medal, to George Ponton, Woolston.

Broadcast sowing-machines for grain, the premium of 6 sovs., to George Finlayson, Gighty Burn, Arbroath.

The second best, the bronze medal, to Alexander Dick, Smithy Green, Liberton.

Drill sowing-machines for grain, the premium of 6 sovs., to William and James Hunter, Samuelston, Haddington.

The second best, the bronze medal, to Mrs. Sherriff, West Barns.

Sowing-machines for grass seeds, the premium of 6 sovs., to George Finlayson, Gighty Burn, Arbroath.

The second best, the bronze medal, to Andrew Tyrie, Errol.

Sowing-machines for turnips, the premium of 4 sovs., to George Finlayson, Gighty Burn.

The second best, the bronze medal, to Alexander Jack and Son, Maybole.

Sowing-machines for turnips with manure, the premium of 5 sovs., to R. and J. Reeves, Bratton Iron Works, Westbury.

The second best, the bronze medal, to Nathaniel Smith, Thrapston.

Dibbling or drop sowing-machines with manure, premium, 3 sovs.—No entry.

Sowing-machines for mangold, the premium of 4 sovs., to J. and T. Young, Newton Green, Ayr.

The second best, the bronze medal, to Charles Hay, Free-lands, Ratho.

Sowing-machines for carrots, the premium of 4 sovs., to Mrs. Sherriff, West Barns, Dunbar.

Three-row sowing-machines for beans, the premium of 4 sovs., to Mrs. Sherriff, West Barns.

The second best, the bronze medal, to George Hunter, Kippelaw, Dalkeith.

One-row sowing-machines for beans, the premium of 1 sov., to Alexander Jack and Son, Arbroath.

The second best, the bronze medal, to Andrew Tyrie, Errol.

Machines for pulverising guano, the premium of 4 sovs., to James Thomson, Stow.

The second best, the bronze medal, to James Mitchell, Fisher's Tryst.

Machines for distributing guano in drill or broadcast, the premium of 6 sovs., to R. and J. Reeves, Westbury.

The second best, the bronze medal, to Mrs. Sherriff, West Barns.

Liquid manure distributing-machines, the premium of 4 sovs., to the trustees of W. Crosskill, Beverley.

The second best, the bronze medal, to Isaac James, Cheltenham.

Liquid manure pumps, the premium of 2 sovs., to the trustees of W. Crosskill, Beverley.

The second best, the bronze medal, to Smith Brothers and Co., Glasgow.

Horse-hoes for drilled grain crops, the premium of 6 sov W. and J. Hunter, Haddington.

The second best, the bronze medal, to Smith and Ashby, Stamford.

Horse-hoes for green crops, the premium of 2 sovs., to William Gray, Cambusnethan.

The second best, the bronze medal, to James Kirkwood, Tranent.

Machines for singling turnips, the premium of 4 sovs., to P. McGregor and Sons, Keith.

The second best, the bronze medal, to John Heston, Kettering.

Machines for raising potatoes, the premium of 4 sovs., to Smith Brothers and Co., Glasgow.

The second best, the bronze medal, to Robert Law, Shetleston.

Scythes for general purposes, the premium of 1 sov., to James Smith, Lawhill, Auchterarder.

The second best, the bronze medal, to James Payne, Kirkcubright.

Reaping-machines for 1 horse, the premium of 10 sovs. to Gardner and Lindsay, Stirling. (No award for second.)

Reaping-machines for 2 horses, premium of 10 sovs., Burgess and Key, Newgate-street, London. The second best, bronze medal, Watson Bell.

Horse-stubble or hay-rakes, premiums of 2 sovs., J. Kirkwood, Tranent. Second best, bronze medal, Page & Co., Bedford.

Hand-stubble or hay-rakes, the premium of 2 sovs., to William Kirkwood, Duddingston, Portobello.

The second best, the bronze medal, to Young, Peddie, and Co., Edinburgh and Glasgow.

Thrashing-machines, adapted for 2 or more horses, the premium of 10 sovs., to Wm. Brothers, Kendal.

Thrashing-machines, with steam-power, the premium of 50 sovs., divided between William Foster, Lincoln; and R. Robey and Co., Lincoln.

Fanners or other machines for winnowing grain, the premium of 4 sovs., to John Richardson, Brunton-place, Carlisle.

The second best, the bronze medal, to John Grant, Lenny Park, Corstorphine.

Fanners or other machines for cleaning grass seeds, the premium of 4 sovs., to John Richardson, Brunton-place.

The second best, the bronze medal, to Robert Beld, Colliston Mill, Arbroath.

Weighing-machines for grain, the premium of 4 sovs., to Harriot and Co., Grange-street, Glasgow.

The second best, the bronze medal, to D. and J. Thomson, Edinburgh.

Weighing-machines, indicating from 1 lb. to 2 tons, the premium of 4 sovs., to A. and W. Smith and Co., Glasgow.

The second best, the bronze medal, to R. Forshaw and Co., Liverpool.

Straw-cutters for hand-labour, the premium of 2 sovs., to Richmond and Ohandler, Liverpool and Manchester.

The second best, the bronze medal, to Pickaley, Sims, and Co., Leigh.

Straw-cutters for power, the premium of 3 sovs., to Richmond and Chandler, Manchester and Liverpool.

The second best, the bronze medal, to Pickaley, Sims, and Co., Leigh.

Turnip-cutters for cattle, the premium of 2 sovs., to Pickaley, Sims, and Co., Leigh.

The second best, the bronze medal, to John Wingate, Alloa.

Turnip-cutters for sheep, the premium of 2 sovs., to Pickaley, Sims, and Co., Leigh.

Turnip-cutters for sheep, attachable to a cart, the premium of 3 sovs., to Mrs. Sherriff, West Barns.

The second best, the bronze medal, to James Kirkwood, Tranent.

Machines for pulping turnips, the premium of 4 sovs.—No award.

Root-washers, the premium of 2 sovs., to the trustees of W. Crosskill, Beverley.

The second best, the bronze medal, to George Porteous, Haddington.

Linseed-bruisers for hand-labour, the premium of 2 sovs., to Richmond and Ohandler, Manchester.

Oil-cake bruiser for hand-labour, the premium of 2 sovs., to Richmond and Ohandler, Manchester.

The second best, the bronze medal, to Smith and Ashby, Stamford.

Grain-grinders or bruisers for power, the premium of 6 sovs., to Richmond and Chandler, Manchester.

The second best, the bronze medal, to Smith Brothers and Co., Glasgow.

Steaming apparatus for food, the premium of 5 sovs., to Smith Brothers and Co., Glasgow.

The second best, the bronze medal, to Richmond and Ohandler, Manchester.

Feeding-troughs for byres, the premium of 1 sov., to Patrick B. Muir Macredie, of Perceon, Ayrshire.

The second best, the bronze medal, to John Robson, Glasgow.

Feeding-troughs for sheep, the premium of 1 sov., to William Kirkwood, Duddingston.

The second best, the bronze medal, to John Robson, Glasgow.

Sheep-fodder racks, the premium of 2 sovs., to James Kirkwood, Tranent.

The second best, the bronze medal, to Young, Peddie, and Co., Edinburgh.

Churns worked by hand, the premium of 2 sovs., to Robert Tinkler, Penrith.

The second best, the bronze medal, to Philip Hunter, Edinburgh.

Churns worked by power, the premium of 3 sovs., to Wm. Lindsay, Edinburgh.

Cheese-presses, the premium of 2 sovs., to J. and T. Young, Newton-Green, Ayr.

The second best, the bronze medal, to Smith Brothers and Co., Glasgow.

Curd-cutters for dairy purposes, the premium of 1 sov., to J. and T. Young, Newton-Green, Ayr.

General sets of dairy utensils, the premium of 1 sov., to Wm. Lindsay, Edinburgh.

The second best, the bronze medal, to Philip Hunter, Edinburgh.

One-horse carts, with harvest frame, the premium of 4 sovs., to Robert Law, Shetleston.

The second best, the bronze medal, to the trustees of W. Crosskill, Beverley.

Harvest carts, the premium of 4 sovs., to the trustees of W. Crosskill, Beverley.

The second best, the bronze medal, to Robert Law, Shetleston.

Light spring carts, the premium of 4 sovs., to the trustees of W. Crosskill, Beverley.

The second best, the bronze medal, to the trustees of W. Crosskill, Beverley.

Apparatus for conveying implements on the farm.—No award.

Divisions, racks, and manglers, for farm stables, the premium of 1 sov., to Adam Jack and Co., Glasgow.

The second best, the bronze medal, to Young, Peddie, and Co., Edinburgh.

Farm harness, the premium of 1 sov., to Hay Downie, Corstorphine.

The second best, the bronze medal to Thomas M. Berry, Leith.

Stone or iron stack pillars, with framework, the premium of 2 sovs., to Young, Peddie, and Co., Glasgow.

The second best, the bronze medal, to John Robson, Glasgow.

Field gates, constructed entirely of iron, the premium of 1 sov., to J. M. Watson and Co., Edinburgh.

The second best, the bronze medal, to J. M. Watson and Co.

Field gates, not constructed entirely of iron, premium of 1 sov.—No entry.

Dunghill gates, to open at different elevations, the premium of 1 sov., to James Denholm, Morningside, Edinburgh.

Iron hurdles for cattle fence, the premium of 1 sov., to Young, Peddie, and Co., Edinburgh.

The second best, the bronze medal, to Thomas Perry and Son, Glasgow.

Iron netting for sheep fence, the premium of 1 sov., to Young, Peddie, and Co., Glasgow.

The second best, the bronze medal, to Bain, McNicol, and Young, Edinburgh.

Light wooden hurdles for sheep.—No entry.

Pipe or tile machines for hand or power, the premium of 6 sovs., to Edward Page and Co., Bedford.

Glazed pipes for conveying water under pressure, the premium of 5 sovs., to John Robson, Glasgow.

The second best, the bronze medal, to John Grieve, Preston-pans.

Tiles and pipes for field-drainage, the premium of 2 sovs., to John Robson, Glasgow.

The second best, the bronze medal, to William Brodie, Dunbar.

Glazed socketed pipes for sewerage, the premium of 3 sovs., to Patrick B. Muir Macredie, Perceon, Kilmarnock.

The second best, the bronze medal, to John Robson, Glasgow.

Tools for cutting field drains.—No entry.

Tools for cutting open drains in hill pastures.—No entry.

General sets of hand implements for the farm, the premium of 2 sovs., to William Millar, Airmuntly, Stanley, Perthshire.

Apparatus for manufacturing and supplying gas to country-houses and farm-steadings, the premium of 10 sovs., to J. T. B. Porter and Co., Lincoln.

Wheel-barrows of malleable iron, the premium of 1 sov., to William Kirkwood, Duddingston.

Barrows for conveying cooked food, the premium of 1 sov., to John Wingate, Alloa.

The second best, the bronze medal, to John Wingate.

EXTRA IMPLEMENTS, &c.—(COMMENDED.)

The summer-house and rustic seats of J. T. Alexander, Carnoustie.

Hand turnip-drill and sack-holder, and barrow, of James Begbie, Haddington.

Patent washing machine, with wringing and mangling combined, of Thomas Bradford, Manchester.

Patent portable double-cylinder steam engine, of Alexander Chaplin and Co., Cranstonhill, Glasgow.

Patent separator for drawing off the whey from the curd in making cheese, of Robert M'Adam, Silverdale, Newcastle-under-Lyne.

Machine for shaking the grain from the straw, of Peter McLellan, Abernethy.

Machine for making cattle-fencing, of Alexander Macpherson, Carstairs, Lanark.

Revolving machine for dressing flour, of Alexander Mather, Edinburgh.

The collection of Francis Morton and Co., Liverpool.—*Specialty commended.*

American cast-steel hay and straw forks, of James Payne, Kirkeudbright.

Straw-rope twister, of Robert Robertson, Traprain, Prestonkirk.

Carrot seed, bearding, and clover and trefoil seed, milling, and dressing machine, of Thomas Scott, London.

Mowing and rolling machines, of A. Shanks and Son, Arbroath.

Dynamometer and odometer, of Alexander and George H. Slight, Edinburgh.

M'Kinnell's patent ventilators, of George R. Stewart, Glasgow.

Patent rotary force and lift pumps, of John H. Winder, Sheffield.

THE IMPLEMENT SHOW AND TRIALS.

Our duties as recorders of the leading features of the Implement yard will be comparatively easy; time for bidding at present anything like a critical examination—of the novelties displayed. But of “novelties” in the strictest sense of the term there is at this meeting a marked absence, exhibitors evidently leaning to the safer and more practical view that excellence of workmanship and simplification of details are more to be desired than attempts at the introduction of implements or machines in which mere novelty of arrangement or application is the principal feature. The time is going quickly by, when the mere announcement that “the thing is *quite new*” is to be its passport to purchasers. On the contrary, it is evident from many signs which read aright show that reduction in the number of machines, as well as in the simplicity of their parts and economy in working, are the points to which our agricultural implement-makers have to direct their attention. “Invention” has in many cases ran so “mad” that the re-action has at last, we think, set in. The absence then of “novelties” of the class to which we have alluded is therefore a point of congratulation, rather than of condolence or regret, with all those who are interested in the economical progress of agricultural mechanism.

The Edinburgh meeting excels in interest and the number and importance of its entries all its predecessors. In Glasgow, 1857, the number of implemental “entries” was 610; at Aberdeen, last year, 820; while this year, at Edinburgh, the “entries” are 980; the exhibitors numbering 163. For prizes the sum of £335 was offered, in addition to 87 bronze medals as second prizes.

As many of our readers are aware, the implements and machines exhibited at the Highland Society's Shows are ranged under various sections or classes, according to the nature of their use or application in the field or farm-steading. Whatever virtue there may be in this system of classification judged from a scientific point of view—and in this light we are free to admit that it is possessed of many, and we may say most valuable advantages—still, viewed with reference to the convenience and pecuniary interest of exhibitors, there can be little doubt as to its prejudicial influence. The subject, so often discussed both in our own columns and elsewhere, may to some appear worn out and *effete*, and scarcely worth the time bestowed upon its continued ventilation. Still, representing as we do more particularly the English exhibitors, whose interests are most closely in-

volved in the question, we should feel ourselves wanting in duty if we allowed this—admittedly a pertinent—opportunity to go past without again urging upon the directors of the Society the necessity of at least considering the question, and taking evidence, if needful, *pre and con*. This consideration of the bearings of the system is not too much to ask; to say the least, it will be a courtesy appreciated by those to whom most undoubtedly the Highland Society's meetings are greatly indebted for much of their interest and practical utility. For what, may it be asked, would the implemental departments of the various meetings have been, without the specimens of agricultural mechanism which the English makers have so liberally contributed? If not exactly like, in its results, in “playing Hamlet and leaving out the Dane,” certainly the interest of the show-yards would have been most materially decreased. By “continual dropping, water wears away stone;” so possibly the continual “representations” and the “grumbings” to which it gives rise may tend in time to force the subject upon the attention of the directors, and lead to its due and calm “consideration.” Thus, in the fulness of time, we come to another and a more convenient system of implemental arrangement.

Reserving a more critical examination of the leading features of the show-yard till another and we hope an early opportunity, we proceed to draw attention to the different sections of implements exhibited, the number of exhibitors in each, and the successful competitors.

In Section First, two-horse ploughs for general purposes, there were 29 exhibitors. Howard, of Bedford—unexpectedly by some, one may remark in passing—competed in this section; he and Page, of Bedford, representing the English exhibitors. Howard took the first prize of £3, and G. Sellar and Son, of Huntley, the bronze medal.

In Section Second, trench or deep-furrow ploughs, there were 7 exhibitors; George Sellar and Son, of Huntley, taking the first prize, and Howard the bronze medal. At the trial in this section, the plough of Page and Co., of Bedford, ran hard upon that of Sellar, which took the prize. Under the head of ploughs, we may remark that, on the whole, the work as executed on the trial field was anything but satisfactory. There was little “easy” work shown, and a deficiency of precision in laying even the furrow-lice at the best angle was noticed here and there. Irregularity in the “sole” was also marked in the working of some. It would materially simplify the trials if “swing” and “wheel” ploughs were tried under separate sections; strictly speaking, they cannot be classed as similar implements. It was a matter of regret to many that the new plough of Hornsby, which so unexpectedly but so worthily won the laurels at the Warwick Show, was not entered for competition. This non-entrance arose from a “misunderstanding,” referred to elsewhere. To the merits of this plough—a few specimens of which were exhibited at the stand of Messrs. Hornsby in the yard—we shall hereafter draw the attention of our readers.

In Section Third, subsoil ploughs for two horses, five exhibitors entered; of whom James Kirkwood, of Tranent, took the first prize of £4, and Sellar and Son, of Huntley, the bronze medal.

In Section Fourth, subsoil ploughs for three or four horses, two exhibitors entered; of whom R. Law, of Shettleston, Glasgow, took the first prize of £4, and James Kirkwood, of Tranent, the bronze medal. The prize plough of Mr. Law presents some features worthy of notice.

In Section Fifth, double mould-board ploughs for forming drills or bulking, with attachment for lifting potatoes, there were twelve exhibitors; of whom G. Ponton, of Llanthgow, took the first prize of £3, and

J. Kirkwood, of Tranent, the bronze medal. The use of potato-lifters, or "branders," as an attachment to ploughs of this class, is rapidly, and we think justly extending, as they do their work very well, and economically; more so, in the opinion of many practical men, than the potato-lifters on the "revolving tine principle," first introduced by Mr. Hanson, and latterly by a pretty numerous body of imitators. The action of the "brander lifter" is certainly—in conjunction with the splitting of the drills by the double mould-board plough—much more gentle, and more closely resembles the manual labour system, where there is the mind of the operator to control the action of the hand-grip or fork, than the quick cutting action of the revolving tines of the machine above alluded to. Indeed the violent action of the latter machine is pretty well indicated in the netting attached to Hanson and the lattice-work of other inventors (exemplified in more than one in the show-yard), which has for its object the catching of the potatoes thrown aside, and preventing them from being cast too much out of the way. In the implements in the section now under consideration the brander is attached to the hinder end of the sole of the plough, and consists generally of three bars, two stretching outwards, the third and central being straight. They are all placed at an angle to the line of sole; the earth, as it is split from the drill, passing up the inclined bars, falling through between them, and leaving the potatoes exposed on the surface. The outside bars—made, generally, flat and somewhat sharp-edged—serve to cut up the earth, leaving it open on the sides, well exposing the potatoes.

In Section Sixth—ribbing ploughs—four exhibitors were entered, of whom James Kirkwood, of Tranent, took the first prize of £2, and Messrs. McGregor, of Keith, the bronze medal. Kirkwood's implement is worthy of notice from the ease with which the ribbing-coulters can be taken out of and placed in work by a simple lever movement, placed within easy reach of the driver. It has a deservedly high reputation.

In Section Seventh—two-horse grubbers or cultivators—there were twenty-two exhibitors, of whom Coleman, of Chelmsford, took the first prize of £4, and James Kirkwood, of Tranent, the bronze medal. Coleman's excellent cultivator—as it is somewhat loosely designated—is too well known to need description here. Messrs. Young, Peddie, and Co., of Edinburgh, exhibited two forms of Tennant's well-known grubber.

In Section Eighth—Norwegian harrows, or pulverizing land-rollers—there were fourteen exhibitors, of whom David Young, Kelso, took the first prize of £4, Messrs. Jack and Son, of Maybole, the bronze medal. It would have been better had the Norwegian harrows been classed separately from the pulverizing land-rollers, of which Crosskill's clod-crusher and Cambridge's roller were representations. The Norwegian harrow is an implement to which considerable attention is paid by Scotch makers; it seems better adapted to the working of the soil generally met with in Scotland than Crosskill's clod-crusher, which is more particularly adapted to the heavy clays of England—a class of soil in which it has effected wonders, opening up, in many, a new feature of fertility, to which, without it, they could have made little progress. Perhaps one of the most characteristic forms of the Scotch make of Norwegian harrows is that of Mr. Kirkwood, of Tranent, who exhibited in the section. The frame in this is made entirely of wrought-iron; up to a certain point the frame is rectangular, but in front the side-bars are produced and led inwards, till they meet in a point. At this point the stud is supported which carries the front wheel, capable of adjustment by its stem, so as to raise or depress the front end of the frame. The hinder part of the frame

is supported by a cross shaft provided with two crank arms, one at each end; the extremities of these carry pins on which the bearing-wheels run. The cross shaft is worked by a lever placed within reach of the attendant. By moving this, the crank-arms of the cross shaft are raised or depressed, and the wheels with them, now depressing the frame, or raising it from the ground, and decreasing or increasing the depth to which the revolving tines work. These tines are formed on central wheels or studs, six to each: these are strung, as it were, upon three axles, placed parallel to each other; the teeth or tines interlace with each other as they revolve, thus keeping them clear from all adhering soil, &c.

In Section Ninth—consolidating land-rollers—there were eighteen exhibitors; of whom Robert Wright, of Seton, Prestonpans, took the first prize of £5, and Crosskill the bronze medal. Great length of roller, observable in some of the implements exhibited, presents difficulties in working over every portion of the soil, which shorter lengths would obviate: a long roller is also more difficult to turn at the headlands than one which is shorter, or made up into shorter lengths. Simple as the construction of this implement appears, there are points connected with it which, if neglected, will lead to non-economy of working.

In Section Tenth—land-pressers for preparing seed-bed for grain—there were six exhibitors; of whom Messrs. Smith, Brothers, and Co., of Glasgow, took the first prize of £5, and Messrs. Young, Peddie, and Co. the bronze medal.

In Section Eleventh—ribbing machines—Mr. Sheriff, of West Barns, Dunbar, took the first prize of £2, and T. Kirkwood, of Tranent, the bronze medal. These were the only two exhibitors under this section.

In Section Twelfth—harrows for heavy land—there were ten exhibitors, of whom Messrs. Howard took the first prize of £3, and J. Kirkwood the bronze medal.

In Section Thirteenth—harrows for light land—nine exhibitors entered; of whom, Edward Page and Co., of Bedford, took the first prize of £3, and Messrs. Howard the bronze medal.

In Section Fourteenth—harrows for covering grass-seeds—there were eight exhibitors; of whom, Howard took the first prize of £3, and Messrs. Page the bronze medal. Of this class of implements we may remark, in passing, that the species of "invention" which strives after novelties is pretty well exemplified in many of its specimens. Some forms of "chain harrows" are almost useless in practice; the land seldom being in that condition in which their peculiar mode of operation can be made available. It is probable that no more efficient implements can be met with than in one or two discarded because old-fashioned forms; a reason too often considered sufficient to cause an old and well-tried implement to give way to one of more pretentious design and arrangement. It is possible that in more than one class of implements we may see a retrogressive movement, a fleeing from new, and a returning to old, principles of operation. We see, indeed, the beginning of this movement in more than one section already.

Decreasing space warns us to conclude, and defer our further notes. We have just enough left for us to say that, while to an unusual extent Scotch makers are well represented at this great meeting, the well-known English enterprise was not behind in its display. Hornsby, Clayton and Shuttleworth, Garrett, Howard, Richmond and Chandler (this firm booking for the *eleventh* consecutive time at the Society's show the largest share of the prizes for such machines as chaff-cutters, &c., for which they are so distinguished), Coleman, Crosskill, Page, Edward and Co., Robey, Pickaley, Sims and Co., Samuelson, Smith and Ashby, Bentall, and Williamson, being all well represented.

THE YORKSHIRE AGRICULTURAL SOCIETY.

MEETING AT HULL.

X X X X

It is quite pleasant to see the affectionate embrace of the two sisters, Agriculture and Commerce. It is now eighteen years since the elder sister from the country visited her younger upon the banks of the Humber. In 1841, Agriculture was entertained with cordial greetings and sumptuous displays on the Dock Green, in the very heart of the town, where now great ships ride at ease, discharging and receiving cargoes from and to the continent of Europe. Wonderful change! Commerce has enlarged her domains. The old boundary lines, the very hamlets of Hull, are now covered with docks and quays and warehouses, while the dwellings of the Many-handed stretch far beyond. Nor could the retinue which agriculture brings with her, indicative of a like astounding increase, be located in 1859 where it was in 1841, even though the Dock Green were green with grass, instead of copper.

Very instructive was the interview between the sisters. With the naïve partiality of mothers, they discussed of their children's growth, characteristics, and promise; and dwelt, in a manner that cannot be forgotten, upon those potential influences which had been unto them as the pillar of fire by night, and of cloud by day.

The Yorkshire Society has increased amazingly in strength. In 1838, when it held its first meeting at York, there were 301 entries, and now we find 105 entries of cattle, 82 of sheep, 68 of pigs, 240 of horses, 252 poultry, 5 of grain and wool, and 1,029 of implements; in all 1,781. May success ever attend upon these useful meetings! Indeed, while the trials of implements are so admirably conducted, and such care is taken to impart good counsel to the purchaser, and due encouragement to the manufacturer, by the employment of men thoroughly qualified as judges, the Society cannot fail, as the friend of both, to maintain the firm respect and cordial support of the district over which it presides.

The show-yard, situated some little way out of Hull, on the Anlaby road, and accommodated by the North Eastern Railway Company with a siding, and by the Telegraph Company with a wire for the speedy transmission of messages to the town, was very spacious, and arranged with a special view to the comfort of stock, the convenience of exhibitors, and the requirements of the public. The provision made to facilitate the labours of the stock judge was exceedingly perfect.

To begin with the machinery, never, perhaps, have the reaping machines had a better trial than they had here. We shall, therefore, give a little more space than ordinary to a description of this practical branch of the meeting.

The trial commenced on Monday, about five miles from Hull, on a field of beans, in the occupancy of Mr. Clark, of Hessel. The competing machines were eight in number: Burgess and Key's, Crosskill's Bell's, a machine of novel construction invented by Dr. Eddy, a one and two-horse reaper of Cuthbert, Wray's of Bedale, Samuelson's, and Wood's combined reaping and mowing machine. Burgess and Key's, and Crosskill's Bell's, which are self-delivering, are too well known to need description. Samuelson's is also a self-delivering machine. He has adopted an automaton rake, which is made by an ingenious contrivance to clear the platform in a more or less effectual manner. Wray's is a ma-

chine on the old Hussey construction, with the ever-objectionable appliance of a screw-gearing to drive the cutting-bar, the spindle, conveying motion from the travelling-wheel, being vertical. The American machine, invented by Wood, has been noticed, and Cuthbert's likewise, which is an improved Hussey, without the tipping platform introduced by Dray. Dr. Eddy's machine, manufactured and exhibited by Hughes of Loughborough, consists of a frame, square or nearly so, one side of which is formed by the cutting-bar, which is five feet in length; one-half of the space thus enclosed is occupied by a stationary platform inclining upwards to the left side. Through slits in the platform, teeth of sheet iron work, appearing and disappearing: these are rigid with the cutting-bar. The grain that falls upon the platform is thus guided into the space between it and the travelling-wheel on the right, which is guarded off, and passes out under the back frame, when the platform catches its running bearing.

The work made by this machine in the beans was not good, in consequence of the space being too limited to void the material. For the same reason it failed in the barley. Samuelson's worked fairly; but the action of the rake, though very commendable, was far from perfect, and added very considerably to the work of the horses. Burgess and Key's did not work so well as was expected, nor Bell's; and the general opinion was decidedly in favour of Cuthbert, especially the one-horse machine, which, with a man to guide the corn from the platform, and another to lead the horse, was cutting smartly, and delivering well for the binders, with a velocity which excited general admiration.

On Tuesday the same machines met to cut down an eight-acre field of barley—a nice upstanding crop. The work was equally divided, and Crosskill's Bell's, with the horses pushing it before them, set it out in splendid style. This done, it fell into its own place, and made beautiful work. The cut was wide, and exceedingly low and clean, and the swathe was laid with great evenness. But the delivery was imperfect in the barley, and very imperfect in the long wheat.

Burgess and Key's did not make so good or clear a cut as Bell's, nor was the swathe so cleverly cut for binders; but it went on at an easy, continuous pace, without any delay, working very well with two horses, with one driver, and one man to keep all clear about the platform.

Samuelson's, with two horses and one driver, made very uncertain, tangled work, leaving cars one way, and tails another.

Wood's machine, with one driver, and one man to rake off the platform, seemed comparatively easy draught for two horses, which walked along at a slow pace. The cut was tolerably good and clear, though not, as will be seen by a reference to the appended table, very wide. The delivery by hand is very defective, a confused, tangled swathe being left for the binders to make the best they can of.

Wray's reaper took a small cut, and employed one man putting off with rake, and one man and one lad to lead two horses. The work was trying for the horses, the stubble showed a defective cut, and the grain was so indifferently laid that eight binders had hard work to keep up, notwithstanding the length of time taken to deal with the plot.

Cuthbert's two-horse machine made, with the exception of Crosskill's, the cleanest cut in the field, carrying about 4 feet 6 inches. The stubble was beautifully left, and the barley was bunched by a side delivery in very nice order for binding. The work was done with great rapidity, two men being on the machine, one man and one boy driving, and six binders following. The one-horse machine, carrying one man, surprised every one by its rapid clever volutions, close level cut, and orderly bunching.

The following table will show at a glance those points of comparison which it is the object of these trials to discover :

NAME.	Reputed Cut.	Actual Cut.	No. of Horses.	Men em- ployed.	Boys.	Binders.	Time.	Price.
	Ins.	Ins.					Minutes.	£ s.
Burgess & Key....	60	52	2	2	0	0	39	43 10
Crosskill.....	81	68	2	2	0	0	33	42 0
Samuelson.....	60	42	2	2	0	0	not done	32 10
Dr. Eddy.....	60	42	2	1	0	0	not done	35 0
Woods.....	60	44	2	2	0	7	42	35 0
Wray.....	54	42	2	2	1	8	60	16 0
Cuthbert.....	60	54	2	3	1	6	37	25 10
Idito.....	60	40	1	1	1	6	39	22 0

The four first are self-delivering, and have, except Samuelson's, the sickle-edged knife. Wood's has a sickle-edged knife; Cuthbert and Wray's knives are plain.

The machines then moved across the road into a stout standing crop of wheat, upon the same farm. Bell's went first to set out the work, which it did with difficulty. Wood's did fair work, but left the sward in sad disorder. Wray's worked with great difficulty, both for man and horses, cutting and laying the grain indifferently. Samuelson's cut pretty freely, but the action of the rake was very imperfect, entailing extra labour upon the binders. Burgess and Key's pursued its quiet way at an even pace, cutting pretty well, and laying the sward in perfect style. Bell's fared worse in the long wheat without the third belt than it did in the barley, so much so, that one man was kept continually at work to clear the platform, which he did only with the greatest exertion. Cuthbert's two-horse machines, with side delivery, made extremely good work; but the one-horse machine was the admiration of every one, cutting its way through the heavy crop in splendid fashion, leaving a clear short stubble, and compact orderly bunches, good sheaf size.

No one was surprised, and every one was satisfied when the award of the judges became known, the prize of £20 being divided equally between this little one-horse machine and Burgess and Key's. These two machines would not, however, have been placed upon this equality, had the society left the judges unrestricted as to the mode in which the money was to be awarded. They would probably have made the distinction of first and second prize. Possibly they might have given £15 to Burgess and Key's, and £5 to Cuthbert.

It is not to be supposed that gentlemen of their discernment should under-rate the superior value of a self-delivery, to obtain which in perfection such strenuous effort is being made. Well as Cuthbert's machines performed, it must be borne in mind that they were worked by their owners, who of course strained every nerve to secure their success, and made, as did Wray, superhuman efforts to keep the platforms clear. In using these machines the question is, can we depend upon our men for the same watchfulness, care, and untiring effort? The self-delivering machines work without it, and that is the reason, although they cost double the money, why they are so much employed. Machinery is required to supersede human labour, and

premiums should be offered and awarded accordingly. Whilst holding these opinions we quite justify the award, because it would have been highly improper to have given the whole prize to Burgess and Key's, when in point of cut, time, power, price, and construction the little machine discovered in some senses a decided superiority, which will render its adoption in heavy land districts, and where farms are small, a matter of certainty. The makers will do well to give it their whole attention. If they can make it self-delivering, and at the same time confine it pretty nearly to its present weight and size, they will confer a great boon upon themselves, and a greater upon the public. J

This having been the most satisfactory trial of reaping machines we have known, considerable space has been given to its report. We now proceed to the plough and harrow trials.

About one mile from Hesale, on the road to Hull, a clover lea was set aside for these. The ground was so extremely hard, and the nature of the clay so remarkably tenacious, that the trial of ploughs was not at all satisfactory. The swing ploughs tried were all worsted. Howard's general purpose plough received the first prize, and Busby's the second. Howard's general purpose plough was entered for the contest amongst the heavy land ploughs, turning a furrow 11 inches by 9 inches, with four horses; but the coulters fastening giving way, the plough was disqualified. Busby took the first prize in this class, and Cook, of Lincoln, the second. The draughts were not taken. It will not be right, however, to pass unmentioned Hancock's pulverizer, a strong iron plough, with three sharp shares, a little in advance of each other, set at different depths. This implement broke up and pulverized the clay soil to a depth of some 7 inches with two horses, with comparative ease and great efficiency. We should doubt its value in foul land, because we all know the difficulty of getting rid of "twitch" cut into small pieces; but where land is free from twitch, and particularly in cultivating the intervals between beans or those of wheat sown on the Lois-Weedon system, this implement would be invaluable. It has several fittings, and is convertible from a simple parer to a cultivator, or a plough and cultivator combined. It received a special prize of £3.

In the harrow trial we noticed Howard's and Bental's heavy harrows working extremely well. Howard's by reason of their steady searching cut stood first, and Bental's were highly commended. The light harrow prize was awarded to Bental's and Busby's were highly commended.

We now pass to our notes made in the yard upon those novelties and special improvements which attracted attention.

The silver medal of the Society was awarded to Isaac Spight, of Brigg, for a horse-hoe. Its working width is 7 feet, taking ten rows of wheat and five of turnips. The shaft which carries the hoe-levers sends at each extremity an iron rod up through a slot in the upper framework. The head of this rod is T-shaped, and furnished with rollers, which travel on flat surfaces, and so secure to the hoes one uniform and easily modulated motion to either side. The hoes are screwed to mortised heads, which slide upon the levers, and are thus capable of being adjusted to any desirable position. Their pitch is nicely arranged by lever. The details are all practical and simple, the workmanship is exceedingly good and strong, and the price (with double sets of hoes and weights) is £15.

Messrs. R. and J. Reeves, of Westbury, for the best drill for turnips, &c., on the ridge, and for the best broadcast manure-distributor, received two prizes. The manure-distributor is the simplest and cheapest imple-

ment of its kind. It casts the manure over 6 feet of ground, and by additional troughs can be made to dispense it in three or four streams for ridge-work. The box is furnished with revolving notched cylinder, stirrers, and slides; price £10. The ridge-drill, with rollers, manure-box, &c., all strong and good; price £12.

The drill for sowing turnips on the flat, and the general corn drill made by J. Coultas and Son and J. Coultas, jun., of Grantham, deserves notice on account of good workmanship, efficiency, and cheapness.

B. Kitzner, of Louth, received a prize of £3 for a machine for blowing and sifting corn, price £10. The screen behind, presenting considerable surface, consists of two riddles rigid in the same frame, the upper one of which is half the length of the bottom, and is furnished with a transverse trough to carry off the white heads on to one side. The motion is particularly easy.

A prize was likewise given to Marshalls, of York, for a Cambridge roller with seed drill attached. Price £15. The roller is the large size. The drill behind has two compartments; one above to hold seed, with slides to regulate its descent to the compartments below, where the cupped barrels revolve. The gearing is very simple, and the whole implement wonderfully cheap.

One of the most striking things in the yard is Winder's rotary force-pump, manufactured at Sheffield: Within a strong bolted case revolve two oval wheels, $5\frac{1}{2}$ inches in diameter and $2\frac{1}{2}$ inches in thickness, working into each other. The water enters the case at the bottom; the stream then divides, each wheel drawing and filling the chamber. The fluid is thus carried round to the upper part of the case, and forcibly ejected by the coming together of the outer diameter of the wheels in their rotation, thus giving a continuous flow, and effecting a powerful vacuum. The same invention is applied to steam engines, but here the leading coqs are acted upon by springs of steel or India-rubber. The steam is admitted by openings at the upper side of the case. The pistons are forced round by the pressure, and the steam ejected from the lower outlet.

A small hand-pump, with a suction pipe $1\frac{1}{2}$ in. diam., which forms a capital garden or fire-engine, will discharge 1,200 gallons of water per hour.

We have also to notice Hodson's brick machine, of Hull, which presents some improvements, showing a saving of some 4s. per 1,000 in the making of bricks. The clay, being thoroughly ground in the pug-mill, it finds its way down to the mould at bottom, into which it is forced. It is received upon a poised platform, which, when the wire cuts off the brick from the column of clay above, sinks with it, and rises again on the removal of the brick by a boy. The contrivance is ingenious; but what we saw at Warwick—bricks being made of dry dust—spoils us for the difficulties that attend upon the preparation of clay and wire drawing.

Four-sevenths of the exhibitors were men of the county, the principal of which were the Trustees of Messrs. Crosskill, of Beverley, and Messrs. A. and E. Crosskill, of the same place, who made a very capital display with prize clod-crushers, cheap one-horse carts, liquid manure carts, and wheels and axles; Sawney, of Beverley, who had a very large collection of all sorts, and Busby, of Bedale, with prize ploughs, harrows, hoes, &c. The engineering ability of Lincoln was well represented by Messrs. Clayton and Shuttleworth, who showed their combined thrashing machine, portable engine, and straw elevator, at work, than which there are none others more deservedly popular. For excellence and efficiency they are everywhere recognized as farmers' implements. Ruston and Proctor, also, of the same place, well maintained their reputation; while Tuxford and Sons, of Boston, with their best of engines, and an improved combined thrashing machine, with Boby's

screen adapted, were surrounded with admirers. Bentall and Coleman were also there, with their useful cultivators; and Hornsby's prize plough (which, owing to some mistake or other, did not meet Howard's in competition) was there, bearing on an unsullied breast the trophies of Warwick.

The Shorthorn show of cattle at the Yorkshire Society's Meetings always ranks as one of the highest and best in the United Kingdom. It is the chief locality of the breed, for it connects as to a centre the breeds of the counties of Durham, Northumberland, Cumberland, Lancashire, York, Nottingham, Lincoln, Rutland, and Leicester—districts where they are exclusively bred, and that with great care and judgment. The celebrity of the Show may be evidenced by the beautiful display always seen of individual specimens of the breed, and the competition amongst our most eminent breeders. Colonel Towneley has for several years given to it his best patronage, and this year he comes with unusual splendour, and in great force. We do not recollect to have seen such a splendid lot of animals produced by any individual breeder at any show equal to them. We begin with Master Butterfly 5th, a beautiful animal, of a good red colour; perhaps somewhat elongated in frame, but it is in good form. He receives a commendation. We next have Royal Butterfly, roan, who takes again, as he has done everywhere, first prize. We have so recently described him that we shall only say he has suffered nothing from much travelling and the vicissitudes of shows. He looks as beautiful in form and feature as at Warwick. In class 3 (bull calves) we find three exceedingly good animals, certainly too far advanced to be called calves. No. 25 is Bow Bearer (roan), who takes 2nd prize. No. 26, Burnley, a very pretty fellow, a beautiful roan, with plenty of good points to make a first-class animal: he takes 1st prize; and No. 27, Broad Back, also a roan of highly commendable frame. All these are the Colonel's. In class 4 he has Emma, a good red, with a remarkably deep compact full form, of broad cylindrical shape, on rather short legs; her bosom and breast-end are unequalled; her girth is altogether in true form; her good broad back and hips are correct in form; her tuts are very good, but not too heavy; her flank and thighs capital, and dug and teats becoming a milch cow: she takes 1st prize, with great credit, her adversary being a good one. In class 5 we have Alice Butterfly, red, in good character and form. In class 6 we have Pearl, red, a very handsome, proportionate, and symmetrical heifer, taking 2nd prize; and Fidelity, white, a superb heifer, more beautiful in form, and of deeper symmetrical proportions than usual. She takes 1st prize without dispute. In class 7, yearling heifers, we have Precious Stone, white: she takes 2nd prize, and running near for the 1st; and Rose of Lancaster, roan, having the same contour of frame, both full in form, and good. In class 8 (heifer calves), we miss the Colonel; as also in class 9 for fat oxen; but in class 10, for fat cows, we find Beauty's Butterfly—certainly one of the most splendid and best formed cows we have seen for some years. She is nearly perfect in form; we could only discover one defective point, i.e., a slight contraction in frame, or defect between her hips and tuts. We have heretofore said that the Colonel's herd have manifested a slight contraction in frame immediately behind the shoulders, about the third and fourth ribs; but this cow possesses one of the broadest spines and greatest rotundity of girth we ever saw; her depth is wonderful, and the level fullness of her sides and underneath parts is exceedingly good. Her girth is nearly nine feet; we fear to commit ourselves to name her weight, but it must considerably exceed 100 stones imperial—the prize. In the Extra

Stock Class we have Diadem, another very superior animal, with exceedingly good underneath parts, and excellent frame—commended. Thus we have the Colonel showing thirteen most splendid animals, with which he has taken no less than six first prizes, three second and one commendation; this out of nine classes. The Aylesby (Mr. Torr's) herd appears in good representation, and takes a second prize with *Wave Hope* in the Heifer Calf Class, and a high commendation in the Bull Calf Class. This whole class was commended.

The Warlaby (Mr. R. Booth's) herd is beautifully represented, Queen Mab appearing in all her royal glory and popularity. As she took a most prominent position at a recent show (Hartlepool) as the best short-horn, in competition with Royal Butterfly and others, we took especial notice of her. We still hold to Royal Butterfly, as we did at Warwick. Queen Mab is by no means perfect. She has a thin neck and narrow chine and shoulders; her plaits are good, underneath parts good, thighs slight, and flank defective, rump defective, twist good; her general frame not perfect or symmetrical enough for our taste.

Mr. Ambler shows a fine cow, Woodbine, roan, with splendid hips and tuts, very broad and fat, with deep full thighs, her frame large and proportionate; but her fore-quarters are not equal to her hind-quarters. His yearling bull, Prince Talleyrand, takes 2nd prize, and is in every respect a first-class animal.

Capt. Gunter exhibits several excellent animals. His Duchess 77th, in the yearling heifer class, received 1st prize. She has a well-formed cylindrical frame, of somewhat slender proportions; her girth not large. Beside her we have Duchess 78th and Duchess 79th and Red Blossom, all very handsome and good in frame and character, and by the 6th Duke of Oxford. This class was generally commended. His Moss Rose, in the two-year old heifer class, is a capital animal, having splendid hind quarters, not good in girth, and her head and horns common looking. Capt. Gunter also received a commendation with Princess Royal, a beautiful heifer.

Lady Pigot exhibits some beautiful specimens of the breed. The Duchess of Gloucester 2nd has splendid hind-quarters, but chine and shoulders thin. Her two yearling heifers are very superior. She receives a commendation with Duchess of Gloucester 2nd, bred by Jonas Webb. Mr. H. Smith and Mr. W. Smith show some splendid animals quite in character with their reputed breed. Sir C. R. Tempest, J. R. Middleborough, J. Hall, Lord Walsingham, Lord Feversham, also sustain the show most creditably. Mr. W. B. Cox wins the first prize in the Aged Bull class with Statesman, a capital bull, with a deep full frame, but not very noble in his appearance; we like prize bulls to possess some grandeur about them. "Butter bulls" are highly serviceable animals no doubt; but a prize animal must have some nobility of character—if not, he is but a common animal, and nothing more.

The sheep were almost exclusively confined to Leicesters and longwools, very few short-wooled sheep appearing. The several classes of rams were well contested, and many splendid animals were shown. Mr. Sanday and Mr. Pawlett again came into competition, but with a different result to that at Warwick. Two prizes were awarded to rams from Mr. Sanday's flock, while Mr. Pawlett's merely received a commendation. Mr. Sanday's two-shear beat Mr. Pawlett's three-shear, thus reversing the judgment at Warwick. Mr. Borton shows several first-class sheep; Mr. Simpson, Mr. Abraham, the Hon. G. Lascelles, Mr. Marris, Mr. Beal, and M. and J. Horsely, show very superior sheep.

The classes of ewes were unusually good and numerous. Eleven pens of shearing ewes, and nine pens of aged ewes, each pen containing five animals, were exhib-

ited. Mr. Simpson's pen of ewes were greatly admired; their forequarters were admirable and rumps good. Mr. Goffton's were smaller, but very compact and handsome. Mr. Holliday's were exceedingly good, but Mr. Lovel's only commendable. In the shearing ewe class Mr. Jordan showed a very complete and handsome lot, which took first prize; Mr. J. Simpson's capital lot taking second place. In the shearing wether class Mr. Jordan again shows some splendid animals, with which he again takes first prize; Mr. Lovel taking second place with a very superior lot. There were seven pens in the class, of a highly commendable character.

Amongst the pigs, we noticed some extraordinary animals. Mr. Hickman's sow of the large breed is an immense creature: she had a litter of pigs in December, is 3 years 3 months old, and weighs alive 11 cwt. She takes first prize. Mr. Wainman's boar is immensely large. Mr. Richardson shows two exceedingly good animals, his Eclipse winning first prize. Mr. Harrison's second prize boar is of excellent character and form. Mr. Wainman's sow is very large, and in good form, and he takes second prize in competition with the immense sow of Mr. Hickman's.

Messrs. Cole and Walker show a beautiful specimen of the small breed, excellent in frame and quality. Lord Wenlock's Cato by Brutus takes first prize, Mr. Pearson's Harry second prize; class commended. Viscount Galway's twenty-month sow is a fine animal of its class, square level back, capital crop; takes first prize. Mr. J. Coate's Miss Emily, in Class 25, of any breed, is a capital sow; so is Mr. Ward's Lady Ann, but not so nicely proportioned. Miss Watson, Mr. Preston's sow, takes second prize in Class 24; class highly commended. Lieut.-Col. Towneley again takes a prize for best small breed sow.

We could not repress a smile, in looking over our catalogue, to find such a singular selection of names to boars and sows—Albert the Second, Billy Bradley, Tom Pinch, Young Duchess, Betty, Matchless; then again Cato, Cassio the Second, Peter, Harry Dewdrop, Violet, Julia, Susan, Poor men's-friend, Miss Watson, Miss Clayton, Lady Sarah, King of the West, Duke of York, Caswell, Wonder, Prince, Young Barnaby, Mark Tapley, and so on.

PRIZE LIST.

CATTLE.

JUDGES.—Mr. Cattle, Dormont, Lockerbie.

Mr. Crofton, Holswell, Durham.

Mr. Drury, Holker, Newton, Catterick.

SHORT-HORNS.

Bulls of any age, first prize of £25, to W. B. Cox, Pickering (Statesman).

Second, £10, to Lord Feversham, Duncombe Park, Helmsley (Prince Imperial).

Commended.—Wm. Smith (Albus); Lieut. Col. Towneley (Master Butterfly 6th).

Yearling bulls, first prize of £20, to Lieut.-Col. Towneley, Towneley Park, Burnley (Royal Butterfly).

Second, £10, to H. Ambler, Watkinson Hall, Halifax (Prince Talleyrand).

Commended.—T. Jolly (Hector).

Bull calves, upwards of five months old, first prize of £10, to Lieut.-Col. Towneley (Burnley).

Second, £5, to Lieut.-Col. Towneley (Bow Bearer).

Highly commended.—W. Torr (Royal Hope).

Cows of any age in calf or milk, first prize of £15, to Lieut.-Col. Towneley (Emma).

Second, £5, to H. Ambler (Woodbine).

Highly commended.—L. Thompson (Honeysuckle).

Three-year-old cows in calf or milk, and having had a calf, first prize of £10, to R. Booth, Warlaby, Northallerton (Queen Mab).

Second, £5, to J. R. Middlebrough, South Milford, Milford Junction (Royal Dairy).

Two-year-old heifers in calf, first prize of £10, to Lieut.-Col. Towneley (Fidelity).

Second, £5, to Lieut.-Col. Towneley (Pearl).

Highly commended.—Captain Gunter (Moss Rose); J. R. Middlebrough.

Yearling heifers, first prize of £10, to Capt. Gunter (Duchess 77th).

Second, £5, to Lieut.-Col. Towneley (Precious Stone).

The class generally commended.

Heifer calves, upwards of five months old, first prize of £5, to Sir C. R. Tempest, Bart., Broughton Hall, Skipton (Harmless).

Second, £3, to W. Torr, Ayleby (Wave Hope).

The class generally commended.

Fat oxen under four years old, first prize of £10, to G. Taylor, Sowerby Cottage, Bridlington.

Second, £5, to S. Wiley, Brandaby, York.

Commended.—Mr. J. Chrispin.

Fat cow of any age, prize of £5, to Lieut.-Col. Towneley (Beauty's Butterfly). No other entry.

CATTLE OF ANY BREED.

Cows for dairy purposes, first prize of £5, to T. Tutin, Winestead, Patrington.

Second, £3, to W. Stead, Owlerton, Sheffield.

The class generally commended.

Six dairy cows, the property of the same owner, prize of £10, to S. Beecroft, Anlaby-road, Hull.

EXTRA STOCK CATTLE.

A first-class medal, to H. Lambert, Wauldby, Brough, for fat roan ox.

A second-class medal, to Lieut.-Col. Towneley, for Diadem.

SHEEP.

JUDGES.—Mr. Chas. Clarke, Whitehouse, Aisthorpe, Lincoln.

Mr. Geo. Leighton, Osgodby, Scarbro'.

Mr. Edward Umbers, Wappenbury, Leamington.

LEICESTER, OR LONG-WOOLLED.

Shearing rams, first prize of £15, to W. Torr.

Second, £5, to J. Borton, Barton House, Malton.

Highly commended.—J. Borton, and Messrs. M. and J. Horsley.

Commended.—J. Simpson.

Rams of any age, first prize of £10, to W. Sanday, Holme Pierrepont, Nottingham.

Second, £5, to J. Borton.

Highly commended.—J. Borton; T. Beal; Messrs. M. and J. Horsley.

Commended.—T. Pawlett, Beeston; J. Simpson.

Pens of five ewes, first prize of £5, to J. Simpson, Shotforth Park.

Second, £3, to W. Goffou, Pockthorpe.

Highly commended.—J. Holiday, Barmston.

Commended.—J. Holiday; W. Lovel, Nafferton Grange.

Pens of five shearing wethers, first prize of £5, to F. Jordan, Eastburn.

Second, £3, to Mr. W. Lovel.

Pens of five shearing gimmers, first prize of £10, to F. Jordan.

Second, £5, to J. J. Simpson, Pilmoor House, Hunmanby.

Highly commended.—W. Goffou.

Commended.—E. D. Conyers.

Pens of five shearing gimmers, first prize of £10, to T. Morris, The Chase, Ulceby.

Second, £5, to the Hon. A. Dancombe, Kilnwick Percy.

SHORT-WOOLLED, OR CROSS BREED.

Pens of five shearing wethers, prize of £5, to J. Wells, Booth Ferry House, Howden.

Highly commended.—W. Thompson, Hunsley.

EXTRA STOCK.

A first-class medal, to J. Hall, Kiveton Park, Worksop, for an aged ewe.

A second-class medal, to F. Jordan, for a fat ewe.

Highly commended.—J. Borton.

Commended.—J. Fullerton, Thrybergh Park, Rotherham.

PIGS.

JUDGES.—Mr. Chas. Clarke, Whitehouse, Aisthorpe, Lincoln.

Mr. Geo. Leighton, Osgodby, Scarbro'.

Mr. Edward Umbers, Wappenbury, Leamington.

Boars, large breed, first prize of £5, to T. M. Richardson, Hibaldstow, Kirton-in-Lindsey.

Second, £2, to W. B. Wainman, Carhead, Crowthill.

Commended.—J. Youhill.

Sows, large breed, in pig or milk, first prize of £5, to J. Hickman, Hull.

Second, £3, to W. B. Wainman.

Boars, small breed, first prize of £5, to J. Wilkinson, Roundhay.

Second, £2, to T. Pearson, Beeston Hill, Leeds.

The class generally commended.

Sows, small breed, in pig or milk, 20 months old, first prize of £5, to Viscount Gaiway, Serlby Hall, Bawtry.

Second, £2, to J. Palmer, Thorby, Skipton.

The class generally highly commended.

Sows, of any breed, in pig or milk, first prize of £5, to M. Walton, Halifax.

Second, £2, to M. Ward, Preston, Hull.

Commended.—W. B. Wainman.

The class generally commended.

Boars, of any breed, first prize of £5, to J. Wilkinson.

Second, £2, to M. Gavins, Woodhouse Carr, Leeds.

Three store pigs, of any breed, and of the same litter, from four to nine months old, first prize of £5, to S. Wiley.

Second, £2, to J. Palmer.

The class generally commended.

EXTRA STOCK.

A first-class medal, to W. S. Owston, The Barff, Brigg, for three boars.

A second-class medal, to Lieut.-Col. Towneley, for a small sow.

Highly commended.—G. Hutchinson, Prospect House, York.

The class generally commended.

HORSES.

JUDGES:—

HUNTERS AND ROADSTERS.

Mr. Thomas Brooks, Croxby, Caistor.

Mr. Slater, North Carlton, Lincoln.

Mr. John West, Melton Ross, Ulceby.

COACHING AND DRAUGHT HORSES.

Mr. Atkinson, Barrowby, Leeds.

Mr. Bowman, Fridaythorpe.

Mr. Gurnell, Appleby, Brigg.

Stallions for hunters, first prize of £20, to J. Batty, Bishop Monkton, Ripon (Elcott, by Venison, dam by Defence, half-bred).

Second, £5, to T. Mansfield, Thirkley Bridge, Thirsk (Spencer, by Cootherstone, dam by Emilius).

Highly commended.—W. Brigham, Beverley (Wild Hero, half-bred).

Commended.—W. Hudson, Brigham (General Williams).

Stallions for coach horses, first prize of £10, to Mr. W. Burton, Murton (Omer Pacha).

Second, £5, to J. Stockdale, Skern.

Stallions for roadsters, first prize of £10, to L. Hodgson, Highthorne (President, jun.).

Second, £5, to R. B. Ridsdale, Water Gate, Ripley (Young Wildfire).

Highly commended.—W. Burton (Sir Colin).

Commended.—J. and H. Cockshott (Merry Driver).

Stallions for agricultural purposes, first prize of £10, to P. Taylor, Peterboro' (England's Glory).

Second, £5, to W. Simpkin, jun., Burton Agnes, Bridlington (Champion).

Commended.—R. Askham, Barnhill Hall, Howden (Black Douglas); T. Johnson, Hatfield, Doncaster, (Young John Bull).

Mares and foals for hunting, prize of £5, to C. Harrison, Melton, Brough (Marygold).

Commended.—W. Abraham, Barnetby, Ulceby.

Mares and foals for coaching, prize of £5, to J. Todd, Harland, Cottingham.

Commended.—S. Beecroft, Anlaby Road.

Roadster mares and foals, prize of £5, to F. Jordan.

Commended.—W. Jackson, Garton, Driffild.

Mares and foals for agricultural purposes, prize of £5, to J. Long, Shipwith, Selby.

Three-year-old hunting geldings, prize of £5, to T. Walker, Danes Hill, Thetford (by Young Melbourne).

Highly commended.—R. C. Metcalf, Patrington, Hull.
 Commended.—W. Goston, Pockthorpe.
 Three-year-old hunting fillies, prize of £5, to C. Harrison (Florence, by Consultation).
 Highly commended.—W. H. Harrison.
 Two-year-old coaching geldings, prize of £5, to I. Maw, Howden.
 Commended.—J. Stephenson.
 Three-year-old hackney geldings or fillies, prize of £5, to W. Johnson.
 Highly commended.—Sir C. Constable, Bart., Burton Constable, Hull.
 Three-year-old geldings or fillies for agricultural purposes, prize of £5, to W. Goston.
 Commended.—T. Upton, Pallathorpe, Tadcaster; R. Forge, Leven, Beverley.
 Two-year-old coaching geldings, prize of £5, to H. Savage, Heale Grange, Hull.
 Commended.—W. Rodmell, Soofham Sutton, Hull.
 Two-year-old agricultural geldings or fillies, prize of £5, to T. Upton.
 Yearling geldings or fillies for agricultural purposes, prize of £3, to H. Grantham, Scawby, Brigg.
 Pairs of horses, of either sex, for agricultural purposes, worked during the season, prize of £5, to W. Angus.
 Commended.—T. Acomb; T. Upton.
 Hackney geldings or mares, not less than four years old, nor exceeding six, prize of £5, to J. T. Robinson, Leckby, Thirsk.
 Highly commended.—W. H. Clark, Howden.
 Commended.—G. B. Skelton, Hibalstow, Kirton-in-Lindsay.
 Two-year-old coaching fillies, prize of £5, to J. B. Thompson, Anlaby, Hull.
 Four-year-old hunter, gelding or mare, prize of £10, to G. Holmes, Beverley (by Young Physician).
 Highly commended.—W. Abraham; L. Hodgson.
 Commended.—J. B. Barkworth, Cottingham Castle, Hull.

EXTRA STOCK.

A first-class medal, to G. Holmes, for a coaching mare.
 A second-class medal, to C. Jordison, Boreas Hill, Hedon, for a coaching mare.
 Highly commended.—J. Featherstone, for a brown filly.

SPECIAL PRIZE.

A silver cup, given by Lord Hotham, to Mr. E. R. Harrison, of Cottingham, for President.
 Highly commended.—G. Holmes's brown filly.

LONG WOOL.

JUDGE:—Mr. Thomas Clayton, South Stainley, Ripley.
 Best five hog fleeces, prize of £5, to Wm. Abraham, Barnethy, Ulceby.
 Highly commended.—J. B. Thompson, Anlaby.

FLAX.

Best specimen of green flax, prize of £5, to H. Tennant, Skewkirk, Tockwith.

I M P L E M E N T S.

JUDGES.—Mr. W. Barugh, Belford Grange, Driffield.
 Mr. John Clarke, Long Sutton, Lincolnshire.
 Mr. George Legard, Easthorpe, Malton.
 Mr. John C. Morton, Streathay, Reading.
 Mr. Edmund Riley, South Dalton, Beverley.
 Mr. John Wheatley, Neswick, Driffield.

Reaping Machines, prize of £20, divided between Burgess and Key, and Cuthbert, of Bedale.

Plough for ploughing six inches deep, prize of £7, to S. Gibson, Barton-on-Humber, for Howard's.

Second, £3, to Busby, Newton-le-Willows, Bedale.

Plough for ploughing nine inches deep, prize of £7, to Busby.

Second, £3, to J. Cooke, Lincoln.

Heavy harrows for three horses, prize of £3, to Gibson, for Howard's.

Light harrows for two horses, prize of £3, to Messrs. Bentall, Maldon.

Drill for turnips and mangold wurtzel on the flat, prize of £5, to Messrs. Coultas and Son, Grantham.

Drill for turnips and mangold wurtzel on the ridge, prize of £5, to Messrs. Reeves and Co., Westbury.

Corn drill, prize of £5, to Messrs. Coultas and Son.

Liquid manure drill, prize of £4, to W. Watkinson, Louth.

Broadcast manure distributor, prize of £5, to Messrs. Reeves, Westbury.

Patent pulverising plough, prize of £3, to Messrs. Hancock and Gloucester.

Patent machine for blowing and sifting corn, prize of £3, to Kittier, of Fulstow, Louth.

Cambridge roller and seed drill, prize of £1, to H. Marshall, York.

Metallic horse collar, prize of £2, to C. Lambert, Hull.

Steel-pointed crow-bar plough, prize of £1, to Busby, Bedale.

The silver medal of the society to Isaac Speight, Brigg, for horse-hoe for corn and turnips.

Highly Commended.—Cooke's light land plough; Bentall's heavy three-horse harrows; Busby's general purposes harrows; Clarke's ridge drill; Winder's (Sheffield) rotary pump.

Commended.—Cranston (London) for Wood's reaper; Busby for Northumbrian harrow.

The Council have decided that the next meeting of the Society shall be held at Pontefract. The Earl of Harwood is president of the society for the ensuing year.

THE DINNER

Took place in a marquee near the railway station. Provision had been made for 700 or 800 visitors, but the company present did not exceed 300. The chair was occupied by the president of the society for the past year, Lord Herries.

The PRESIDENT, after the usual loyal toasts, said: The toast which I have now to propose to you is a subject which intimately affects the progress of agriculture. In the show which we have seen to-day, there is so much to be learnt, so much to be seen which is new to many, and so much which concerns the welfare and prosperity of the country. It is now upwards of twenty years since this society was formed, and since then I think great progress has been made. By the exertions of the society, and I hope the stimulant given by it, our time has not been thrown away; but that those who originated the society must be rewarded in the success it has attained. I do not mean to say that this society has been the source of this progress in agriculture which we every day witness, but I do say that it has been a great inducement and stimulant to the progress of it, and also that it had been the means of bringing everything into a focus which can be of instruction and practical benefit to farmers. It has brought a large number of persons together, and enabled friends to meet friends; it has brought skilled labour and the best and most practical farmers together, and it has brought stock and everything else together, so that when we enter the show-yard there is nothing in agriculture which we cannot see in the greatest perfection. If we look back to twenty years ago, there might be stock which exceeded any of the present day, but at the same time I ask you to look round and enquire whether the general stock has not improved. In every part it is perceptible. You no longer see those lean hard-skinned animals, for the butcher and the market, requiring tons of oilcake to feed them, but animals of a better class are brought: we have seen the deficiencies which existed, and have persevered with energy to improve them. If we look at the implements we shall see what has been wrought. Twenty years ago the tile machine was the most attractive part of the implement yard; while it worked its way, and by cheapening the price of tiles, this machine has been the cause of draining a vast extent of country which would not be drained. Again, the engineer's skill introduced the portable steam

engine; what benefit has not that been for the country at large! The machine we have seen in the show-yard which has come rapidly into use—the reaping machine—what advantage will they not be on crops where labourers are difficult to be procured, and where bushels and bushels would have been wasted! The same may be said with respect to all others, but there are too many for me to name. There is everything in these show-yards which would tend to the improvement of agriculture in every way, and the increase of the engineering department of the country. I beg leave to propose “Prosperity to the Yorkshire Agricultural Society.”

Mr. H. S. THOMPSON returned thanks for the toast. They had achieved a very great success. The stock shown was numerous and exceedingly good. They had been very well received by all classes in Hull. They had had fine weather and a great attendance; and altogether this had been a very decided success. The only thing, indeed, which the Yorkshire Agricultural Society cannot do is to meet and get up a dinner. (Cheers.) They had always failed at that, and the only explanation he put upon it was that when once the people got into the show-yard they were so much taken up with the beauty there presented, that they could not tear themselves away again. Many like himself had been present at the earlier meetings of the society, and recollected the very wonderful changes that had taken place, and to the best part of them Lord Herries had called their attention. He believed there was much more still to be done than what they had seen done. He believed that they were on the eve of improvements quite equal to those which had taken place since the time when turnips and clovers were introduced, and turned light blow-away lands into the most fertile sort of agricultural lands. He believed that the great clay districts, the great expanse of clay in the midst of which Hull stands, eastward into Holderness, and northward towards York, is about to be improved. The great drawback to the cultivation of clays is the difficulty of growing sufficient food to keep the stock upon it. By finding out the right way of growing mangold wurtzel, they at the same time found out how to grow a large quantity almost unfailingly. He had been trying for some years past this cultivation, and last winter he had got some clay land—a real stiff clay or yellow clay three inches from the surface; and if with three nights' frost—which was all there was last winter—he got a very good crop with only one ploughing, he thought he had a right to show that this is the turning point in his being able to grow mangold wurtzel upon a stiff clay. In ploughing up clay they sometimes met with this difficulty: that it has to be done in a very short time, and upon farms which chiefly consist of clay that cannot be done by the ordinary force of the farms. Then comes to the rescue that great power of steam, and he believed that upon these level tracts they would very shortly see steam brought into regular use in the autumn ploughing of clay.

Mr. UMBAS said it gave him the greatest possible satisfaction to return thanks both for himself and his brother judges for the kind manner in which they had noticed their endeavours that day. He could only say that if their services had been beneficial to the Yorkshire Agricultural Society in any way, they were fully repaid for any sacrifices they had made in coming there from a long distance to fulfil their duties.

Mr. SMITH, of Drax Abbey, responded for the successful exhibitors. He found not the least fault with the decision of the judges, and he believed those gentlemen had given their decisions honestly and well. Mr. Thompson alluded to the changes which are constantly taking place in agriculture, and he said that he believes still greater changes and improvements are on the point of taking place. He perfectly agreed with him. He was satisfied that though great improvements have been made, still greater ones are in course or on the point of invention, and which will have a still more beneficial effect on the stiff clay lands of the district. He had unusual opportunities of seeing the different farms in this district, and the manner in which they are worked; and he was of opinion that there was only a small per centage (not more than 30 per cent.) of the stiff lands of this district which are properly drained, and fit to receive the benefit of those inventions which they would soon see.

Mr. G. H. HENEAGE had been very much gratified with the very splendid show of stock in the yard that day, and he thought it had been well said by Mr. Thompson that they were on the eve of great improvements. He was also of opinion that clay lands might be made to pay, and he trusted that before many years had elapsed there would be a very small portion of strong lands in which turnips might not be grown as well as mangold wurtzel. With regard to reaping machines, he considered that Burgess and Key's would suit the large farmers, and that manufactured by Mr. Cuthbert, of Bedale, the small farmers. As to drainage, it had not been sufficiently applied all over the kingdom, but they had ascertained the depth at which land could properly be drained. All, however, could not drain land exactly in the same manner; but in order to do it properly, according to the locality, a farmer must make use of his own eyes and his own experience. With regard to food, he had been told by a practical farmer that cake made of the seeds collected from the cotton plant would fatten stock very nearly as well as oilcake. He hoped that farmers would make the experiment.

Mr. Ald. BLUNDELL, as a seed-crusher and manufacturer of oilcake, quite agreed that cotton-seed, when they could get it in a certain state, was very fair food for cattle, but it would be found that one pound of linseed-cake would do far more good than three or four pounds of cotton-seed cake.

Mr. H. S. THOMPSON said that with respect to the cotton-seed, he might state the experience he had had for the last few years with it for feeding purposes. He had used cotton-seed cake and the best linseed-cake in the feeding of from 70 to 80 head of cattle, during the last winter, namely, cows, feeding beasts, and store cattle, and he used a good many tons of the cotton-seed cake during the period he had mentioned, and it had answered the purpose. Those cattle which had been fed with cotton-seed cake, and those which had been kept upon linseed-cake, in equal quantity, were equally good for the butcher. The cake should not be made from the whole cotton-seeds, but from the shelled seeds, because the husk of the cotton-seed was hard and woody, and dangerous to feed cattle upon, many deaths of animals having occurred in consequence of its use.

Mr. J. A. SYKES proposed “The labourers.” The labourers now-a-days were expected to have some knowledge of the working of agricultural machinery, so that if any wheel or cog, or other little thing got wrong, he might be able to put it right again, without having to wait for his employer, who might be out of the field at the time, or be at market, or at any other place, otherwise the work of the farm might be delayed for hours, until the farmer came home again. He concluded by recommending the establishment of night schools for the education of the agricultural labourers, who might, with proper training and culture, become much more useful in their vocation.

Mr. HANNAM, in returning thanks for the secretary, said it was a matter of congratulation that this had been so successful a meeting—successful in one point in particular, and that was the trial of implements and reapers.

The company then broke up.

TO MAKE POROUS CHEESE.—A Vermont correspondent of the *N. E. Farmer* gives the following description of the causes of porous, puffy, elastic cheese: “To make porous cheese, in the first place heat the milk very hot, not scald it; then throw in the rennet; be sure to get in enough, and if you want a very porous cheese, put in a great deal too much, so that it will come in a very short time, but don't put in but very little salt (not half enough), and then don't let the curd stand long enough for the whey to drain off, but hurry it into the press as quick as you possibly can; then let it stand in the press until it is pressed enough, or until you can conveniently attend to taking it out—and my word for it, if you don't have a porous cheese to your satisfaction, a slice of which will stretch out by pulling at each end like a piece of india-rubber, as long as your arm, and on letting go of it will contract into its original dimensions. The world was not made in a moment, neither can good cheese be made without time and care.”

INDIAN CORN.

If we are lamentably ignorant in this country of many of the food-delicacies prepared so universally on the other side of the Atlantic from Indian corn, judging from the steady import and large annual consumption, there appears to be a growing demand for the corn and meal once so despised in the United Kingdom. If much hominy, samp, succotash, supporne, johnny-cakes, and corn-oysters are unknown here, other preparations of Indian corn are, at least, making their way steadily and progressively. Popped-corn is now met with in our shops. Corn-starch is extensively patronized both as a dietetic article and for the dressing of linen. It makes excellent custards and puddings—is quite as palatable as arrowroot, much cheaper, and as easily prepared.

Maize flour, even of the finest quality, cannot be baked alone into bread. It ferments, like other flour, but the dough falls in the oven, and gives a compact, soap-like loaf, which could not be eaten daily. A certain quantity of some other substance must be mixed with it to make a good bread: a third part of wheat, rye, or potato fecula, is sufficient for this purpose.

The general introduction of Indian corn and meal in the Irish famine year has overcome most of the prejudice formerly entertained here; and the consumption now averages, as the following return shows, about 1,500,000 quarters of the grain, and several thousand hundred-weight of the meal. Two or three million quarters of Indian corn are already shipped annually to different quarters from American ports. And it is calculated that the crop of this grain will reach in a year or two to nine hundred million bushels; while, at no distant period, it may be able to export even this large amount of corn.

The imports of Indian corn into the United Kingdom in the last 14 years have been—

Year.	Quarters.	Year.	Quarters.
1845.....	55,984	1852.....	1,479,890
1846.....	694,184	1853.....	1,554,434
1847.....	3,614,637	1854.....	1,357,375
1848.....	1,577,023	1855.....	1,218,276
1849.....	2,189,164	1856.....	1,777,813
1850.....	1,286,263	1857.....	1,150,783
1851.....	1,821,573	1858.....	1,750,825

Some quantity of Indian corn is received from the Danubian provinces.

Of Indian corn meal we have received in the last three years—

Year.	Cwts.
1856.....	7,880
1857.....	1,092
1858.....	4,637

Indian corn is the staple and peculiar food-crop, or bread-stuff, of the United States; although wheat is now largely competing with it there. Whenever Europe is short of food America stands ready to supply the deficiency with the excess of her corn crop, the superabundance of which

she is obliged at present to fatten swine and live stock on, or to convert into whisky. It is the plant of the country; and the olive branch might with propriety be taken from the claw of their national eagle and the Indian corn plant substituted in its place. With three staples so universally in demand as Indian corn, cotton, and tobacco, the United States will always have marketable commodities at command for extensive shipment.

The importance and value of Indian corn in tropical and semi-tropical countries are too well known to need illustration. On every part of the globe where the hand of civilization has broken the turf this beautiful grain receives a large share of attention. In the western continent it is raised from Canada to Patagonia and the islands of the South Seas, through almost every variety of climate and people, and over an extent, from north to south, of more than 7,000 miles. It was introduced into Africa by the Portuguese in the sixteenth century, and is cultivated more or less from the Mediterranean Sea and the Libyan Desert to the Cape of Good Hope. In Java and the Asiatic isles it forms an important product. In Central Asia it is known and valued, as well as in Australia and the islands of the Indian ocean. In Europe it is extensively produced; in Hungary, in Lombardy, in France, and in Spain, and, we might almost say, from the Ural chain to the Atlantic. No grain could secure such favours from all parts of the world except from its intrinsic value. No other cereal, in fact, except rice, is so extensively cultivated.

Its flexibility of organization makes it very easy of adaptation to climate and soil. Though it prefers moist and rich soils, with strong heats, there are varieties of it which can be raised in tropical climates, at a height of more than 9,000 feet above the level of the sea. The warmest regions of the torrid zone produce maize in abundance, where three crops can be taken in a season; while the short summers of Canada have a variety adapted to them. This cannot be said of rice, which requires great heat, and cannot endure a climate of high latitude.

Indian corn ripens at a time when most other grains have been harvested; it therefore furnishes employment when there would naturally be but little else to do. But what gives to Indian corn its great importance is the actual amount of nutritive matter which it contains. It is said to be third in this respect, wheat and rice containing a somewhat greater amount; though many place maize second only to wheat.

There is hardly any grain which yields so much for the support of animal life. As a fatterer for swine and poultry, we may say that Indian corn is unrivalled in utility. As a food for man it is extensively used, though by some thought to be too stimulating.

Notwithstanding Cobbett's mania in favour of the

extended growth of Indian corn in England, its culture has made little progress in our uncertain climate; and we depend rather upon importation than cultivation. However much it may be raised in small patches for local consumption in other countries, it is in the United States alone that it enters largely and systematically into cultivation. In 1840 the quantity raised in the States was estimated at about 377,352,000 bushels. But so widely has settlement and agricultural progress since extended—so easy is this grain of culture, and so profitable is the return from it, that the crop now raised in the United States is stated to be double that amount. There is no species of cerealia which manifests itself under such various form, size, colour, and chemical ingredients as Indian corn. Varieties are met with exhibiting every grade, size, colour, and conformation between the shrubby reed that grows on the shores of Lake Superior to the gigantic stalk of the Ohio valley; the tiny ears, with flat, clear, clinging grains of Canada, the brilliant rounded little pearl, or the bright-red grains and white cob of the eight-rowed hemallite, to the swelling ears of the big white-and-yellow round seed of the Southern States. Wherever seen, maize is an object of admiration; and its lofty stem, broad leaves, silken tassel, and tall waving flower justly entitle it to be considered the most beautiful—as it is the most bountiful—of all the cereal grasses.

During the revolutionary war in America molasses was frequently made from the stalks of Indian corn; and while it could be kept from fermentation it was highly prized, but soon became tart, an evil, doubtless, easily corrected by lime, as is now practised in all sugar manufactories. It has been ascertained that a bushel of Indian corn worked in a distillery gives over a pint

of oil. It is easily purified, and burns with a clear, bright flame. At a whisky distillery near Ontario oil is extracted at the rate of 16 gallons per 100 bushels of corn, leaving the remaining portion of the corn more valuable, and in better condition for distillation than before the oil is extracted.

Cobbett not only wrote about Indian corn, planted Indian corn, ate Indian corn, raised Indian corn, and made paper of Indian corn husks, but printed a book on the Indian-corn paper. And in this he certainly took much pains to collect all the details respecting the culture, produce, and domestic uses of the grain. Had he lived to the present day, he would have been, at least, gratified to find Indian corn and its products coming into very general use and favourable estimation in the United Kingdom. In the process of kiln-drying, to preserve maize for transport, it is subjected to a degree of heat not greater than 212 degs. Fahr.; sufficiently long to destroy its germinating power, but not long enough to parch or crisp it, so as to impair its substance or nutritious properties. Kiln-drying, however, impairs the flavour of corn of all kinds. Before thrashing it is necessary to husk the corn, which is simply stripping off the fine sheathing that surrounds the ear. To effect this, "husking bees," or friendly meetings of neighbours and friends, are often called in the backwoods, which, after the business is done, end in a pleasant dance and supper. The stripped husks are occasionally used for filling mattresses; door-mats are also made with them. The cobs are even turned to some use; a farina has been prepared from them in Austria; they supply the place of corks for bottles, and have been ground-up and boiled for cattle-food, and they are used as a fuel for smoke-drying bacon.

THE CHILI PINE* AS A FRUIT TREE.

It is the nature of some plants, such as the cereals, to be remunerative to the planter the same year in which they are planted; whilst others, such as the oak and the American aloe, are so notoriously slow in their movements as to require little less than a century to come to maturity. Nevertheless, millions of oak trees are planted annually; and wise men look upon wooded estates as a princely inheritance for their children, and the American aloe (*Agave americana*), notwithstanding the legend of its flowering only once in a hundred years, is still a great favourite in every garden. Hoarding rich sap in its gouty and prickly leaves for thirty years or more, all at once it rushes into bloom with a majestic flower-stem eighteen or twenty feet high, making honourable amends for former delays, and appearing quite a lily among thorns.

The Araucaria, like the oak, has heavy duties to perform, and will not hurry into the fruit-bearing state until, like the aloe, it has elaborated through its evergreen and leathery leaves (which, by-the-by, are at work day

and night, summer and winter) something handsome in the way of a conical-shaped tree one hundred and fifty feet high and prodigiously heavy, for even in its infant state every twig is thickened like a truncheon.

From such a plant as this, then, great things might be expected; and we find that on the slopes of the Andes, where the tree is indigenous, it yields cones from six to nine inches in diameter, and in such profusion that the fruit of one tree will maintain a large family for a whole year, the seeds being as large as almonds and nearly as nutritious.

Its hardihood and its ornamental character are points already established; for it is to be seen in small numbers in every garden of any note, and if its habits had been as precocious as those of ordinary fruit trees, we should no doubt have seen it planted more abundantly; nevertheless the facts are the same, and the day assuredly will come when this gigantic tree will attain its adult character, and produce seeds in such numbers as to become a granary for the owners. Planters ought therefore to avail themselves of the earliest opportunity to get a few planted in good situations, and this leads me

* *Araucaria imbricata*.

to remark that the Araucaria is not the plant for dry ground, neither is it calculated for swamps, as indeed few of the coniferæ are. Evergreen in character, it must be supplied with liquid food for its leaves all the year round, and that from deep rich soil where frost cannot penetrate. A hill-side therefore will eventually be found the best adapted to the growth of this tree since its supply of moisture, in the form of vapour for its leaves and water for its roots, will there be continuous as its demand must be.

Perfectly at home with any amount of rain, its stem is actually roofed by nature with leaves over-lapping each other like tiles to drip downward, quite contrary to the way in which leaves are usually inserted, evidently showing the style of climate it has been prepared by nature to inhabit.

As to its cost, that great hindrance to the introduction of all good things, it is quoted in the nursery catalogues, "well-established in pots in ornamental style for immediate planting, from 2s. 6d. upwards;" and I may as well state, that an acre of ground will not contain more than four full-grown Araucarias. There is an avenue of Araucaria imbricata planted with great care in Lady Rolle's magnificent park at Bicton, near Exmouth.

Half-a-century has added considerably to our experience in the management of this tree, and has marvellously reduced its cost; for if I have been rightly informed, Mr. Cunningham paid fabulous prices to the late Mr. Lee, of the Hammersmith Nurseries, London,

for plants with only the seed leaves on, and tidy-sized plants were worth ten guineas; and, as the matter stands now, they are cheap at that, since it will be from these first-got specimens that the true character of the tree will be seen.

A forest of these trees a few square miles in extent, such as we see of pines, would be something so truly grand that we can hardly think it possible to be realized. The high importance and real beauty of a grove of trees, such as the Araucaria, is not a matter of caprice, neither is it to be looked upon as the mere fancy of a lover of trees, but a fact unalterably settled in the councils of the Creator; hence we find it recorded in holy writ, "Hurt not the earth nor the trees;" and, when we consider all the points of excellence in the Chili pine, we shall not fail to see that it is entitled to the highest consideration among trees as something truly great and good; and if any argument were necessary to induce landed proprietors to plant, they might be told that he who plants even one ornamental tree may look proudly to it as to a living and beautiful monument that may for ages be admired. Highly honoured indeed must the memory of that man be whose trees shall be counted so highly of, that it would seem from the passage quoted as if God himself paused before He would give his angels the final order to destroy: "Hurt not the trees."

ALEX. FORSYTH.

13, Islington-square, Salford, Manchester.

INTRODUCTION OF ENGLISH BIRDS AND GAME INTO AUSTRALIA.

Of all the people of the world there is not a more migratory one than the Anglo-Saxon; and yet after all there are none who so ardently cling to their native country—who so long to revisit its island shores when opportunity offers, even after long years of absence, and who delight to surround themselves with everything that can awaken olden recollections and early habits. This passion becomes a mania in which the Englishman indulges at the cost of any bodily fatigue or extravagant outlay. He will keep up Christmas festivities in remembrance of olden times, although his festive holiday at the Antipodes comes round at the wrong season, with none of the Christmas associations. He will shoot or race, or hunt, or play cricket, under a tropical sun at the expense of health and comfort, because it reminds him of home. Whatever, indeed, comes from his native land, or serves to bring back the remembrance of "old friends at home", is appreciated far beyond anything more easily attainable, and is sought for and secured with an eagerness and avidity only understood and appreciated by those who have been long settled in a far distant land. The inimitable Sam Slick has graphically and truthfully described the colonists' dependence on and love for England and everything of English origin:

"When he went to school, his hat, his coat, his shirt, his trousers, and his shoes—all came from England;

his satchel was made in Manchester, and his slate was from the English slate-quarries; his book and paper, his lead-pencil, his ruler and copy-book, were all sent from England. The moment he began to use a horse, his saddle and bridle, spurs, crupper, girths, whip, halter, reins, bits, currycomb, brush, and iron shoes, were all made for him in England. If he enjoyed the sports of the field, his gun, his flask, his shot-bag, powder and shot, and percussion-caps were English, If he went fishing, his rod and line, the sinker, the floats, and even the flies were English, although there were flies in the colony big enough and strong enough to bite through a boot, and the borders of the lakes were covered with wood that would supply the whole world with fishing-rods. If he built a vessel, not a single thing in it belonged to the country where it was built; the rigging, the iron, the copper, the ropes, the chains, the rudder, the compass, and all the fittings were English. If he built a house, which he did very early, for he was a very amorous young gentleman, and frequently caught his bird before he had got a cage, then the trees were cut with an English axe, sawn with an English saw, planed with an English plane; the boards were nailed with English nails and by an English hammer, and the windows were of English glass, put-tied with English putty. Then the carpet, knives, forks, plates, were English, and so were the decanters—for he

would drink something besides cold water. He thought, too, it was something touching that the colonist still said he was going "home" when he came on a visit to England; and though it might be thought that the man he had been supposing, having brought nothing into the world, took nothing out with him, yet he was put in an English coffin lined with English flannel, covered with English cloth, screwed down with English screws and an English screw-driver, and his name was on an English coffin-plate. The priest, in an English gown, read the service over him out of an English book, and the earth was shovelled over him with English shovels. From the cradle to the grave the colonist was dependent on England."

But this is a pardonable failing, and one in which we can all sympathize; and, even when carried to excess, it has its practical and beneficial bearing.

There is a confident reliance on the character and quality of everything of English make and of English origin; and although, in many instances, this trustful confidence is too often betrayed by the sharp dealing of unprincipled merchants and manufacturers, the opinion cannot be rooted out, and continues to manifest itself, alike in the breast of old colonists and new settlers. English-bred horses, cattle, and sheep; English agricultural implements and seeds; English literature, all find a preferential interest in the distant dependencies of the British Empire.

There are many familiar flowers too, which seen in a distant land, like the *Elcaya* of the East and others, spoken of by Moore, are sources of most delightful recollections. The author of "Walks through many Lands," wandering light-hearted in a foreign country, describes himself as having been suddenly arrested in his course by the scent of well-known flowers wafted across his path, which so vividly recalled the remembrance of home as to affect him very deeply. Bishop Heber too, was surprised and affected on finding an English daisy in India.

So true it is that—

There is an innate feeling clings
Around our human clay;
A fondness for familiar things,
That will not pass away.

Long may this bond of associative ideas between Great Britain and her colonies be maintained!

Distant as the Australian colonies are, there are none more thoroughly English in their habits, or more devotedly attached to the various sports and pastimes of the Old Country, which are promoted with a vigour not exceeded at home. The turf is patronized in almost every district and settlement of Australia, Tasmania, and New Zealand. Aquatic pursuits are carried on with considerable energy, cricket has become a colonial institution, while public incidents are celebrated as they are in England by most hospitable festivities. But the colonists are drawing around them all the associations possible that can remind them of the island which they have quitted. Amongst other matters to which they are now turning special attention is the introduction of British game and singing birds,

which may become, prospectively, of general benefit to the colonies. The facilities for the undertaking are great, and persevering attention, care, and judgment the principal requirements. From their geographical position and climate the southern colonies appear peculiarly adapted for the naturalization of the game and singing birds of Britain, and it is a matter of surprise that the colonial squirearchy, the possessors of large estates, have not, ere this, used some energetic means for their domiciliation.

We draw prominent attention to this subject now, because we perceive it is under discussion in the colonial legislatures and journals; and some few private efforts are making in the matter, which only require imitation to lead to very beneficial and pleasurable results. With respect to singing birds, attempts have been made by a few amateurs, which in several instances have proved successful; but there is much room for enlargement and improvement.

We see no reason," observes a Tasmanian journal, "whatever, why the blackbird and thrush should not enliven our woods with their tuneful notes, and recall many a happy scene and happy hour of by-gone times at home, nor why the thrilling melody of the skylark 'at Heaven's gate singing' should not be heard around our farmhouses and homesteads in every direction throughout the land. Several of these joyous songsters have been imported, and have done remarkably well in confinement, *a priori*, therefore, we may reasonably assume that, with care and attention in their distribution and location they would thrive and multiply in their natural liberty. Much, however, would depend on the manner in which the birds were treated and taken care of on the voyage, and this care would not be materially augmented by the number of the little passengers. The success of their importation may be inferred from what has been so well done by Captains Harmsworth and Coppin, who have brought several interesting, if not valuable additions to our native ornithology, and, especially, as regards some choice specimens of improved breeds of poultry. There is nothing to prevent this practice from being carried out to such an extent as to introduce into the colony the different varieties of British game, the climate, soil, and general face of the country being well adapted to their support and habits."

Several small importations of deer, fowl, pheasants, partridges and singing birds, in good condition, have been made to Victoria and Tasmania lately. The deer introduced have done well, proving, beyond a doubt, that their naturalization could be effected without difficulty, and that, in time, herds might be established in the park-like lands that adjoin the country-seats of many of the affluent settlers. As the wild, indigenous game of the country—kangaroos, emus, &c.—are becoming scarce, they may advantageously be replaced with the more domesticated species of Europe, which gladden an Englishman's eye. The introduction of pheasants is stated to be a decided success in Tasmania and other quarters, and they have bred when domesticated. There can be no

doubt, therefore, as to the possibility of successfully conveying these varieties to the antipodes, for, with ordinary care on ship-board they will reach their destination but little the worse for the voyage, and that little easily repaired. If then the pheasant is so hardy, a bird and readily inured to a change of residence, what is there to prevent its extensive domiciliation with the partridge in the Australian settlements? Quails are already native. There are no vermin there to interfere with the game, for the native dog and cat are not met with in the settled districts. The only enemy to be feared is the hawk, not a very bold bird, and avoiding close contiguity to the habitations of man, so that any great danger on this account need not be apprehended. The hare has not, we believe, yet found its way to the Australian colonies; but it might be introduced, with some care and comparatively little trouble. There are already rabbits in the colonies, both tame and wild, in numbers; and why not hares? True, the hare is naturally a wild and timid animal, fond of solitude and afraid of every creature larger than itself; it affects secluded coverts and coppices, is retiring and solitary in its habits, and, as a general rule, shuns the vicinity and companionship of man. But for all this the shy and timid creature may be tamed, and even domesticated in the way that all wild animals ought to be subdued, by considerate kindness. Who has not read with delight the poet Cowper's description of his three pets, the hares which are now identified with his revered name and amiable virtues? We have known other instances in England where this timid creature has been rendered perfectly docile,

so that this quality in the animal would obviate many of the disadvantages incident to the voyage, and it is highly probable that if any number were turned out into a preserve they would soon become familiarised to the change of habitation, regain their natural habits, and with ordinary care and circumspection thrive well and successfully. Some hares sent out in a vessel called the "Norfolk" all died. Half-a-dozen hares were shipped not many months ago by a Mr. James Austin, in a vessel called the "Pioneer," with a lot of partridges, pheasants, blackbirds, and thrushes, linnets, goldfinches, larks, &c., for his estate at Barwan Park, near Geelong, and an experienced gamekeeper was sent out in charge of them. Several other private shipments have also been made, and the Parliament of Victoria has voted a sum in aid of the efforts making by Mr. Edwd. Wilson and other colonists, now in England, to introduce game, singing birds, fish, &c.

Among the fowls recently introduced are Spanish, Poland, Dorking, and game, from highly-prized strains of blood, some of which will no doubt figure at future Australian poultry shows. Too little attention has hitherto been paid to domestic poultry in Australia, and yet these are always an important accessory in colonies, whether for farm or town use. As a result of these frequent importations, the colonists will, eventually, have many of the English game and singing birds naturalized among them. With the successful introduction of deer, hares, partridges, pheasants, salmon and trout, the Australian colonist may not only resort to the rod and gun for pleasurable sport, but may indulge in old esteemed dainties for the table.

"SILK AND SCARLET;" BY THE DRUID.

Rogerson, Tuxford, and Co., 246, Strand, London.

That many a stout warrior lived and fought before Agamemnon, we scarcely require the melodious assurance of Horace to inform us; nor are we inclined to depart from his reflection that these gallant souls have passed away unnoticed, because the penman was wanting to rescue the spearman from oblivion.

In this respect, however, modern notabilities have doubtless an advantage over the heroes of antiquity: this is the age of memoirs, recollections, biographies, autobiographies, diaries, &c.; and no man in these days need fear that his good and evil deeds, his talents, whims, weaknesses, or vagaries, shall be lost to posterity, for lack of a recorder. Neither can the keen-eyed goddess of the chase, nor her blind sister, who from the top of her revolving wheel presides over the turf, complain that literature has done injustice to the votaries of fox-hunting and horse-racing: on the contrary, the books that have been written on these favourite subjects would form no meagre library; and a casual reader would, perhaps, be surprised to find what an amount of erudition, research, and elegance adorns their pages, as though the sportsman should

support his stables on Corinthian pillars, and deck his dog-kennels with cornices and mouldings of gold.

Thomson has not scorned to tell us, in sonorous verse, of "Feats Thessalian centaurs never knew;" and one of the best epics of its kind, that was ever written, under the title of the "Billesdon Coplow Poem," describes such a gallop over Leicestershire as makes the blood tingle in despite of oneself.

Who has not sympathized with the daring energy of Assheton Smith's *début*?

"The H. H. who in Leicestershire never had been,
And, of course, such a tickler could rarely have seen;"
and appreciated the *pluck* that did him such yeoman's service, when—

"With dashing and scrambling, and *one rattling fall*,
He saw all the fun up to Stretton's white hall"?

Who has not fancied himself alongside of the flying quartette, who "made such sharp play," that—

"Had you judged of these four by the trim of their pace,
At Bibury you'd thought they were riding a race"?

or experienced a fellow-feeling with the dashing rider, who rued the natural consequence of his velocity, when—

"Villiers esteemed it a serious bore
That no longer could Shuttlescock fly as before."

But enough of Parsen Louth's graphic poem; we must go on to humble prose, not always less forcible and suggestive.

So early as the time of Charles I., that princely cavalier the Duke of Newcastle wrote an elaborate folio volume on horsemanship: but as his instructions are chiefly directed to the finished arts of the *manège*, he may, perhaps, scarcely come within the category of sporting writers. A century later, in the pages of a quaint work, called the "Sportsman's Dictionary," we find sundry articles devoted to the training and conditioning of hunters. The worthy author's system is, however, somewhat out of vogue in the present time, and his different recipes for the stable are already exploded. We do not now think it beneficial to "comfort the stomach" of a hunter with toast and ale, whatever advantage may be derived from such condiments by his rider; and if we were about to prepare our horse for a match, chase, or plate, to use his own expression, we should be more inclined to adopt the system at present practised at Newmarket, where the ale is altogether discarded, both for man and beast. But the "Sportsman's Dictionary" was doubtless an authority in its day. Cook and Beckford had not then written; and, indeed, the *cacoëthes scribendi* required at least another century ere it could rage rampant through the length and breadth of the land. Perhaps, of all others, the well-known "Nimrod" was the most successful in bringing this style of authorship into repute.

Colonel Cook tells, with laudable accuracy, the exact expenditure entailed by a pack of fox hounds, omitting none of the trifling items most projectors are prone to overlook; but keeping us, it appears, somewhat short of hounds. Fifty couple for four days a week, we would submit, with all due deference to the Colonel, is hardly enough. Beckford, again, goes deep into the science of the thing, restraining much that is poetical and enthusiastic in his nature, and never losing sight of the great practical object of a good sportsman, viz., to kill his fox fairly above ground. He tells us how to choose our hounds, and breed our hounds; how to put them into covert, and cast them at a check; in short, how to handle them in every dilemma in which a pack can be placed. He is great on the habits of the fox, and we suspect, like all men of keen observing powers, was something of a naturalist; but he gives us very little of what we may term the *romance* of the chase. To him hunting is an all-important subject, to be discussed like ethics, strategy, or state-craft, in a temperate and business-like manner.

It was reserved for Nimrod to do for field sports what Sir Walter did for history. For all his lion-heart and stalwart form, the first Richard has been better known to posterity since the publication of "Ivanhoe." And in the same manner, a certain article, penned many years ago by Nimrod for the "Quarterly," has signalized a group of heroes in scarlet, who but for those records had crossed the Styx, as well as the Whissendine, unknown, unhonoured, and unsung. What an article it is! What a February morning! What a field, and what a run! We have always been so sorry for that good little bay horse when he declined at the gate, and a "customer" on his second horse jumped it close to the post, to be followed by another "customer," also on a remount. We regret, we always *shall* regret that "snob" had not two horses out, to enable him to go on in that first flight with which he held his own so well. And we approve of his discretion as well as his humanity, in not pressing the game little animal when it was beat. Though many have been written since, it is far and away the best description of a run in print, and Alken has not failed to catch its dash, and stamp it on those spirited plates of his for ever. Encouraged by

the success of this brilliant sketch, Nimrod became the most voluminous as well as the most popular of sporting authors. For a good many years he contributed largely to this magazine, and amongst many other works, brought out one which he entitled "Hunting Reminiscences," but which people generally called somewhat invidiously, "The Hard Riders of England." It was, as its proper appellation denoted, a series of short accounts of different individuals celebrated for their prowess in the hunting field, and was written in the easy pleasant style, with its wealth of anecdote, which distinguishes its author's earlier productions. Its frontispiece, in which the late Lord Kintore may be seen flying a compound fence, with a drop into a lane, a certain fall, and under which is printed his lordship's provident exclamation to a countryman, "Hie, you sir! catch my horse!" gives an idea of the contents of the work; but although it is an amusing and well-written production, its interest has now passed away with most of those whose deeds it was written to record.

The neaine a whole constellation of sporting writers. Mr. Delmé Radcliffe gave us his experiences and opinions; Mr. Smith his diary and vocabulary; Mr. Grantley Berkeley his own sporting career—*sporting* in the truest sense of the word, as used by the lover of nature, and poetry, and beauty, whether of the woods and wilds, or the changing skies, or the sagacious animals that he made the partners of his amusements.

Nor were the realms of fiction left without their scarlet-coated and top-booted heroes. The inimitable Jorrocks filled four good-sized volumes with his vagaries, ere he retired from Sugars and the Surrey, to turn country gentleman at Hillingdon Hall. Soapy Sponge had the best of it on the queerest of horses, in the "shires" and the "provinces" alike, through several hundred pages, till that indomitable heart succumbed to the fascinations of Lucy Glitters; and Featherbed-fordshire, wherever that county may lie, can scarcely yet have forgotten the rapid good-looking youth, who alternated his failures in the field with his successes in the drawing-room, seldom staying long enough in any one place, at Lord Ladythorne's or elsewhere, to be compelled to "ask mamma." Sporting novels, indeed, are rather on the increase—more's the pity, think we; for the subject is worn nearly threadbare. And there is also a goodly collection of graver works on the same favourite topics. Amongst all the writers of the present day, whose names are familiar to the public, none are perhaps more popular than the gentleman who has for some time contributed to this magazine, under the *soubriquet* of "The Druid," and whose latest and most elaborate work, entitled "Silk and Scarlet," we have just perused, to use a trite expression, with much pleasure and profit. Some short time since, the same author published a little boook called "The Post and Paddock," on the merits of which it is needless to enlarge, inasmuch as its rapid sale will sufficiently bear witness to its qualities. The present volume, he tells us in his preface, was intended as a companion work; but he has, in a happy spirit of improvement on many like efforts, devoted no small portion of his labours to the noble animal without whose sagacity and efficiency our favourite pursuit would be a blank. He has told us of celebrated hounds as well as hunters; of feats performed by Challenger and Melody, as well as leaps taken by Bayard and Buck-jumper; he has written a book, in short, which is interesting to the field in general, but which warms the very cockles of the huntsman's heart.

This is an *ad captandum* age. The outside and the appearance go far to bias our judgment upon most matters. "Silk and Scarlet" is a beautifully got-up little volume, containing portraits of Dick Christian, the noted rough-rider; of Robinson, the Jockey; of